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BOOK FOR
NTEER MEDICAL OFFICERS

SURG-MAJOR V. MATTHEWS

SURG-CAPT. J. HARPER

M.D.

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Surgeon Lieutenant -
Q.O.R. of Canada -
Toronto. -

J. J. Fotheringham - M.D.

MAJOR, A.M.S.

O. C. No, 4, BEARER CO.

A HANDBOOK FOR
VOLUNTEER MEDICAL OFFICERS.

J. P. WILKES
MEDICAL PUBLISHER
AND BOOKSELLER
10 COLLEGE ST.
BOSTON.

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A HANDBOOK
FOR
VOLUNTEER MEDICAL OFFICERS.

COMPILED BY
VALENTINE MATTHEWS,
Surgeon-Major, Volunteer Medical Staff Corps,

AND
J. HARPER,
Surgeon-Captain, Volunteer Medical Staff Corps.



CANCELLED

MAR 26 2001

LONDON:

ALLMAN & SON, LTD., 67, NEW OXFORD STREET.



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PREFACE.

THIS handbook is intended to supply a want which has long been felt by Volunteer Medical Officers. The nature and scope of their duties are fairly defined in paragraph 91, Volunteer Regulations, 1897, dealing with the examination for the certificate of proficiency, and the compilers have therefore taken this as the basis of their work.

The subjects of examination as set forth in that paragraph cover considerable ground, and are dealt with in various official manuals and other treatises.

The main object of this work is to bring together from the various sources available the more important information bearing on certain of the subjects of examination. Those subjects which are dealt with in 'Infantry Drill' and the 'Manual for the Medical Staff Corps' are not specially discussed, as both these works should be in the hands of every Medical Officer of Volunteers.

The matters dealt with under the heading 'War' are intended to refer more particularly to 'Home Defence,' as being in keeping with the spirit of the regulations under which Volunteer Medical Officers are examined, and that branch of the subject with which they as Volunteers are solely concerned.

Candidates are examined *inter alia* in 'the organization of field hospitals,' and in 'the sanitary and other duties generally of a Medical Officer in camp and on the line of march.' These paragraphs refer primarily to duties in the field and in time of war; but inasmuch as the regulations laid down for duties, etc., in time of war are to follow as far as possible those laid down for times of peace, it is necessary to be acquainted with the general organization of military hospitals and with the duties of Medical Officers in time of peace. A short account of these is therefore given in the text.

The compilers are conscious that in a work of this kind, collated for the first time, errors and omissions exist. It is, moreover, necessarily incomplete, and is only intended as a condensation of the many details comprised in the official and other manuals referred to. Nevertheless, they trust that, however imperfect it may be, it will be found of some assistance, not only in preparing for the examination, but for convenient reference at all times, and as a guide to the various sources of fuller information.

They desire to express their indebtedness to the official manuals and to the several authors from whose writings this work has been compiled.

May, 1898.

EXTRACTS FROM REGULATIONS FOR THE
VOLUNTEER FORCE, 1897.

A. PROFICIENCY EXAMINATION.

Paragraph 91.—Medical Officers who have not served as such in the Regular Army or in the Royal Navy, or have not obtained a certificate after passing through a course of instruction at the training school, Medical Staff Corps, Aldershot (see paragraph 314 below), will, in order to obtain certificates of proficiency to enable them to earn the special capitation allowance of £2 10s., be required to pass an examination in squad, company and bearer company drill, in the organization of field hospitals and bearer companies, in the rendering of first aid to the wounded, and in the sanitary and other duties generally of a Medical Officer in camp and on the line of march. This examination will be made before a board of Medical Officers convened by the Principal Medical Officer of the district, and is to be passed within two years of the officer obtaining a commission in a corps. An officer who fails to qualify within that period will be required to resign his commission, unless specially allowed to retain it under paragraph 118 (see below).

B. EFFICIENCY.

Paragraph 118.—An officer who does not attend the number of drills prescribed for the enrolled Volunteers of his corps to qualify them for certificates of efficiency will not be allowed to retain his commission, unless it should be represented to the Secretary of State that there are special reasons for a relaxation of this regulation.

C. SCHOOL OF INSTRUCTION, MEDICAL STAFF CORPS,
ALDERSHOT.

Paragraph 314. — The classes for officers of the Volunteer Medical Staff Corps and Volunteer Medical Officers are held twice a year. The courses extend over a period of six weeks, and include instruction in the interior economy and discipline of the corps and in equitation. Officers who cannot attend these classes may attend a class formed annually on July 1, lasting for one month, which will not include either instruction in the interior economy and discipline of the corps or equitation. In all cases officers, in order to attend, must be certified to have a knowledge of squad and company drill.

BOOKS WHICH SHOULD BE IN THE POSSESSION
OF EVERY VOLUNTEER MEDICAL OFFICER.

Regulations for Army Medical Services.
Manual of Medical Staff Corps.
Standing Orders for Medical Staff Corps.
Regulations for Encampments.
Field Service Manual (Medical Services).
Volunteer Regulations.
Queen's Regulations.
Infantry Drill.

Latest Edition of each.

LIST OF ABBREVIATIONS.

A.F., Army Form.
A.M.S., Army Medical Staff.
A.S.C., Army Service Corps.
C.O., Commanding Officer.
C.R.E., Commanding Royal Engineers.
D.-G., Director-General.
G.O.C., General Officer Commanding.
G.S., General Service.
M.O., Medical Officer.
M.S.C., Medical Staff Corps.
N.C.O., Non-Commissioned Officer.
O.C., Officer Commanding.
P.M.O., Principal Medical Officer.
R.E., Royal Engineers.
S.M.O., Senior Medical Officer.
W.D., War Department.
W.O., Warrant Officer.
W.O., War Office.

J. J. Fotheringham - M.D.

MAJOR. A.M.S.

O. C. No. 4, BEARER CO.



A HANDBOOK FOR VOLUNTEER MEDICAL OFFICERS.

PART I.—PEACE.

~~THE ARMY MEDICAL DEPARTMENT.~~

R. A. M. S.
THE medical officers of the Army Medical Department consist of the following :—

The Director-General.
Principal Medical Officers.
Medical Officers.

Their general duties are as follows :—

The Director-General is the responsible head of the Army Medical Department, and is charged with the administration of :—

R. A. M. S.
The ~~Army Medical Staff.~~
The Medical Staff Corps.
The Militia Medical Staff Corps.
The Militia reserve trained in M.S.C. duties.
The Volunteer Medical Staff Corps.
The Medical Establishment of the Army.

With the supervision of the medical and sanitary duties of the Army, and the preparation of statistical returns for presentation to Parliament, with the supply of medical stores to the Army, and with the preparation of estimates for the above services.

He nominates officers for the following appointments :

Principal Medical Officers.

The charge and, in some cases, the staff of general hospitals, certain station hospitals, and hospital ships.

The charge of hospitals for soldiers' wives and children, including charge of general staff, officers, and their families.

Registrar of general hospitals.

The command and staff of the depôt and training-school Medical Staff Corps.

Recruiting districts.

He details M.O.s, warrant officers, N.C.O.s, and men of the Medical Staff Corps for duty under the P.M.O. in districts and commands.

ARMY MEDICAL STAFF.

GENERAL DUTIES.

The officers of the A.M.S. are charged with the care of the sick and wounded, the administration of military hospitals in peace and war, and the command of the Medical Staff Corps. They have also to make any recommendations to the General or other officer commanding, verbally or in writing, relating to barracks, encampments, garrisons, stations, hospitals, transport, diet, dress, drills, and duties, that may in their opinion conduce to the health of the troops and to the prevention of disease in the Army.

They are employed in military hospitals and with troops in barracks or in the field, and on all such special duties in camp or quarters as the D.G. may decide.

PRINCIPAL MEDICAL OFFICERS.

GENERAL DUTIES.

P.M.O.s appointed to districts and commands or with troops in the field are appointed by the D.G.; are on the staff of the Army; have command under the G.O.C. of all officers of the ~~A.M.S.~~, Militia M.S.C., Volunteer M.S.C., the Medical Reserve, when employed, and the M.S.C., and are responsible to G.O.C.s for all medical arrangements and sanitary duties, and for the administration of all hospitals and medical stores within their district or connected with any force in the field to which they may be appointed.

They issue such orders as may be necessary either in connection with hospital administration, welfare of the sick, or the internal administration of the corps, and are careful that their orders are communicated to all concerned.

They only refer to the D.G. in case of positive difficulty.

They supervise the nature and quantity of diets and extras as ordered for individual cases. They call for an explanation of any seeming inappropriate issue, **check irregularities** or apparent waste or extravagance, and report the same, with their opinions thereon, to the **W.O.** They are only to permit deviation from the authorized dietary in cases of unusual severity and complication.

Other duties include **inspection of recruits, detailing of orderly M.O.s, confidential reports, etc.**

In their temporary absence, their duties will devolve on the senior full-pay medical officer present at Headquarters.

SANITARY DUTIES.

P.M.O.s exercise general supervision over the sanitary conditions of the garrisons, camps, or stations in their district, as regards drainage, cleanliness, removal of nuisances, water-supply, overcrowding, ventilation, lime-washing, lighting of barracks and hospitals, the state of latrines, and all other matters affecting the health of the troops.

They submit in writing all suggestions connected with the health of the troops to the G.O.C. the district, and forward copies of the same to the **W.O.** with their next quarterly sanitary report.

They inspect all stations and camps where troops are quartered in their district, once a year abroad and twice a year at home, and at any other times that the D.G. may appoint.

They make annually a thorough inspection of all camps, hospitals, barracks, and other W.D. buildings at stations in their districts where troops are quartered, and such other inspections as may be necessary or specially ordered.

They note all sanitary defects in buildings, and distinguish whether they arise from—

Neglect of conservancy.

Want of repairs.

Original structural defects.

The first two can be dealt with locally, but the third will be specially reported to the G.O.C.

They ascertain that the sanitary duties of the M.O.s in their command are thoroughly carried out.

If epidemic disease appears in a garrison, they immediately inquire into its cause, and, with the M.O.s in charge, if necessary, recommend in writing such precautionary measures as may be needed to the O.C. the station.

They immediately report the occurrence of epidemic disease, whether among the troops or the civil population, to the D.G., and during its continuance forward a memorandum on the subject, with the weekly or monthly return of sick.

When the water-supply or the sewage effluent is suspected, the P.M.O. (if the requisite materials exist at the station) deposes a M.O. qualified to conduct the analysis to do so, and report the result to the district Commanding R.E. for such action as may be necessary. When the necessary apparatus does not exist, a sample of at least one gallon will be sent through the P.M.O., Netley, to the Professor of Hygiene, Army Medical School, together with the reasons for sending it, and the result of the examination will be transmitted through the W.O. to the G.O.C. the district for the information of the district Commanding R.E. and the P.M.O. for such action as may be necessary.

RETURNS.

P.M.O.s make the following returns to the W.O.:

1. **Weekly.**—Return of changes and casualties among the Army Medical Staff and Nursing Sisters (A.F. C 334).
2. **Monthly.**—The General Distribution Return Army Medical Staff (A.F. C 340).
3. **Quarterly.**—Sanitary Report and Distribution

Return (A.F. C 344). This will embrace a summary of all the reports of the M.O.s under their superintendence. The reports themselves are retained by the P.M.O.

DUTIES IN CONNECTION WITH THE ADMINISTRATION AND INSPECTION OF HOSPITALS AND ARRANGEMENTS FOR MEDICAL ATTENDANCE.

P.M.O.s make frequent visits to hospitals in their vicinity, and give advice in the treatment of serious cases. They satisfy themselves that the hospital is conducted in conformity with regulations, that the patients are properly treated, the diets and extras of good quality, the cooking arrangements good, and the cooks well trained and skilful. They ascertain that the hospital equipment is according to regulation and well kept ; that the supply of medical stores, drugs, and instruments is correct and sufficient ; that the drugs scheduled as poisons are kept under lock and key ; that medicines have been properly issued and accounted for ; and that all returns are accurately made.

They inspect the medicines, instruments, and appliances of M.O.s doing duty with corps.

They furnish the necessary Army forms, books, and stationery.

DUTIES IN CONNECTION WITH THE EMBARKATION AND DISEMBARKATION OF TROOPS.

P.M.O.s make a careful inspection of troops (with women and children), crews, and ships ; as to the health of the former, and the sanitation and sufficiency of M.O.s, attendants, equipment, supplies, and medical comforts of the latter.

At the termination of a voyage, the P.M.O. is responsible that the medical and surgical equipment is received over and returned into Army stores.

DUTIES OF MEDICAL OFFICERS.

DUTIES OF MEDICAL OFFICERS IN CHARGE OF EFFECTIVE
TROOPS IN QUARTERS.*General Duties.*

The M.O. in charge of troops in quarters **examines the sick**, and deals with each case. The routine is as follows :—

Every morning the men of each company who report themselves sick are paraded by the company orderly corporal, who brings with each man **duplicate copies of the company sick report** (A.F. B 256) filled in by him except the last two columns.

If the man is sufficiently ill to be sent to hospital, the M.O. marks opposite his name the word '**Hospital**' and the disease. **Both copies** of the report are sent with him to the M.O. of the station hospital.

If he is not sufficiently ill for hospital, the following terms are used, being marked in the sick report opposite his name :—

1. For trivial cases, '**Medicine and duty.**'
2. When necessary to detain for the day, '**Detained.**'
3. For slight ailments, *e.g.*, vaccination, '**Light duty.**'
4. If malingering, '**Duty.**'

The entries '**Detained**' and '**Light duty**' hold good for one day only, at the end of which time the man must either return to duty or be sent to hospital.

For procedure on arrival at hospital, see p. 17.

The M.O. **examines all men under orders for foreign service**, and writes his report **in duplicate**.

Men are to be rejected if suffering from serious disease, serious venereal disease, or rupture.

Men are to be passed when suffering from slight venereal or other disease, and when likely to recover soon.

The P.M.O. marks his decision against each man's name **on the duplicate roll**. One copy is retained by the P.M.O., and the other is sent with the troops embarking.

The M.O. **inspects the cells and prisoners daily**.

At stations where there is only one M.O. in charge of

Morning Sick Report. { Squadron, Battery, Troop or Company. Station and Date 189 .

Regtl. No.	Rank and Names. (Christian Name in full; M under name if married)	Completed Years of		Religion.	If for Duty.	Whether a Defaulter.	Lines or Barracks.	Room.	Diseases.	Medical Officer's Remarks and Initials.
		Agc.	Service.							
										—

Orderly, N.C.O.

* To be Discharged from Hospital to-morrow.

Squadron, Battery, Troop, or Company.	Corps or Brigade.	Regtl. No.	Rank and Names.	

both troops and hospital, the daily state of sick (on A.F. A 27) will be sent to the O.C. ; otherwise only the company sick reports (A.F. B 256) are furnished to the O.C. the corps.

The M.O. is responsible for the equipment of the Medical Inspection-room, where it exists. Such equipment is as follows :—

- One field medical companion.
- One stomach-pump.
- One pouch of tooth instruments.
- One set of common splints.
- One stethoscope.
- One test dot-card.

He obtains from the station hospital, on requisition, such supplies of medicine, etc., as the P.M.O. may consider necessary.

Sanitary Duties.

He inspects the men under his charge weekly, to satisfy himself as to their personal cleanliness, and for the detection of itch, skin affections, eye diseases, ulcers, and any ailments suggested by the countenance, as fevers, scurvy, smallpox, etc.

From time to time he examines the canteens as to ventilation and the quality of articles of food and drink. He examines the cooking to see that it is sufficiently varied, likewise the quality and amount of drinking water.

He inspects all barrack filters once a month.

He satisfies himself that every barrack, guard-room, and cell is sufficiently lighted and ventilated by day and night, as also the married quarters, school, reading-room, canteen, kitchens, wash-houses, lavatories, urinals, and latrines, and that beds and bedding are freely exposed to the air, and the walls and ceilings of barracks and quarters are limewashed.

The regulation cubic space per man in barracks and guard-rooms is :—

In permanent buildings	...	600 cubic feet.
In huts	... ..	500 „ „

Overcrowding, if it does not actually engender, at

least tends to foster, and increases largely the predisposition to, certain diseases. The more noteworthy of such diseases are phthisis, pneumonia, purulent ophthalmia, scrofula, and typhus, and in hospital wards erysipelas and gangrene.

He visits all parts of the barracks once a week, examines the sanitary conditions, and keep notes in his sanitary note-book of defects, and of his representations to the O.C., with the result of such representations.

He recommends to the O.C. verbally or in writing whatever he considers necessary for the health of the troops, whether as regards removal of local causes of disease, or as to alteration of diets, clothing, drills, or duties.

On the appearance of epidemic disease among the troops or in the neighbourhood, he recommends any precautions he may think desirable to the O.C. in writing.

He transmits to the P.M.O. copies of all sanitary recommendations made by him. If he finds it necessary to send his suggestions to the P.M.O. direct, he sends a copy to the O.C. as well.

Reports.

Daily. Company sick reports (A.F. B 256) to the O.C. (If the M.O. is in charge of both troop and hospital, the daily state of sick—A.F. A 27—is to be sent to the O.C. instead.)

Half-yearly to the P.M.O. on condition of equipment of medical inspection room.

Special reports of sudden deaths, severe accidents, or infectious disease in quarters immediately and direct to O.C. and P.M.O. or S.M.O.


Quarterly sanitary report (A.F. C 344) to the P.M.O.

Annual report on sanitary improvements effected during the year, to the M.O. in charge of the station hospital, who attaches it to the annual return from the station hospital.

Special report of disease of unusual extent or infectious nature to the M.O. in charge of the station hospital, who transmits it to the P.M.O. with his own remarks.

J. Y. Fotheringham. M.D.

MAJOR. A.M.S.

O. C. No. 4. BEARER 

THE MANAGEMENT AND CONTROL OF HOSPITAL ESTABLISHMENTS.

Military hospitals are classified as follows :

In Peace.

General hospitals (dietet).

Station hospitals (dietet and non-dietet).

Hospitals for lunatics (dietet).

Hospitals for women and children (dietet).

Hospitals for infectious disease (dietet).

Hospitals on board ships conveying troops (non-dietet).

In War.

Field hospitals (non-dietet).

Hospitals on the lines of communication, or stationary hospitals (dietet as far as possible).

Base hospital (dietet).

Hospital ships (dietet).

I. GENERAL HOSPITALS.*

1. ORGANIZATION.

General hospitals are organized for the reception of invalids, the local sick of corps, and all others entitled to be admitted into military hospitals.

Separate accommodation is provided for officers.

A special establishment of M.O.s, W.O.s, N.C.O.s, and men of the M.S.C. is provided.

The equipment is laid down in the revised schedules of hospital equipment.

It is held on inventory, and taken over by the Quartermaster on behalf of the P.M.O., who is the accounting officer.

The dieting, as set forth in the diet tables (A.F. I 1203), is used in accordance with the Allowance

* Examples : Netley, Woolwich, Cambridge Hospital (Alder shot).

Regulations. A copy of the diet table is hung in the kitchen and in each ward.

All rooms and wards are to be sufficiently warmed and lighted according to the weather and season.

At home stations the cubic space allowed per bed is :—

For permanent hospitals :—

Light-case wards	-	-	900 cubic feet.
Ordinary wards	-	-	1,200 " "
Infectious wards	-	-	1,500 " "

For detached wooden huts, all wards, 800 cubic feet.

A general hospital is divided into a medical and surgical side, each of which is known as a division.

2. MEDICAL STAFF.

The medical staff attached to a general hospital consists of the following :—

P.M.O.

M.O.s of divisions.

M.O.s attached for duty.

Orderly M.O.

Duties of the P.M.O.

The P.M.O. is responsible for the discipline of the whole establishment. He nominates the M.O.s of divisions and the orderly M.O. for the day.

He sees that the hospital is completely organized as to clothing, bedding, nursing, and general comfort of the sick, the quality and cooking of diets and extras, as also that the equipment, stores, and medical and surgical appliances are in sufficient but not excessive quantity, and that hospital books and records are properly kept.

He causes all invalids to be inspected on arrival and on leaving the hospital, and satisfies himself that their wants have been met.

He sees that the vicinity is preserved in a good sanitary state, that the surface is properly drained and is swept daily, that there are no nuisances, and that the water supply is good and abundant.

3. REGISTRAR.

The Registrar acts as secretary to the P.M.O., whose orders are issued by him. He compiles all statistical and other returns that may be required, and keeps the admission and discharge book.

He takes charge of, keeps up, and transmits to their final destination, the medical history sheets (A.F. B 178) of all men admitted. These documents will be available through him for the M.O. in charge of the case.

On arrival of invalids, he, or in his absence the orderly officer, will at once tell them off to divisions.

He commands the company of the M.S.C. attached to the hospital.

He furnishes the morning (daily) state of sick to the P.M.O.

4. MEDICAL OFFICERS IN CHARGE OF DIVISIONS.

M.O.s in charge of divisions are appointed by the P.M.O., and they themselves detail to wards such M.O.s as may be posted for duty to their division.

They are responsible for the sick under their care, and for the good management and sanitary condition of the division under their charge, as, *e.g.*, the efficiency of the w.c.s and latrines, drainage, ventilation, repairs, lime-washing, washing of wards when ordered, etc.

(Wards are swept and dry rubbed every day, but only washed by special order of the M.O.)

They inspect all filters once a month, and oftener if thought desirable.

5. MEDICAL OFFICERS ATTACHED FOR DUTY.

M.O.s attached for duty are subordinate and responsible to the M.O. in charge of the division to which they are posted.

They report to him any breach of discipline, irregularity, or neglect on the part of any hospital attendant or patient.

They see that order, cleanliness, and regularity are maintained in their wards, and that exactness is inculcated in all details connected with the care of the sick.

They are always to call the attention of the M.O. in charge of the division to all serious cases without delay, and will consult with him in all cases of doubt and difficulty. This, however, will not relieve them of **personal responsibility** for the proper treatment of patients under their care.

When they consider patients fit for discharge, they bring them before the M.O. of the division, who, if he concurs, initials the discharge on the diet sheet.

They give systematic instruction to the ward orderlies in their duties.

They carefully select diets and extras suitable for the treatment of individual cases. They frequently examine and taste them to ascertain their quality, and that they are carefully cooked and served, and they report any defects at once to the M.O. of the division.

When the local sick of corps are admitted to hospital, their rations for the day should be sent to hospital uncooked. The M.O.s order these to be prepared in the most suitable manner.

Should additional nourishment be required before they are put on hospital diet the next day, M.O.s may order what is necessary from the following extras:—Bread, butter, tea, sugar, eggs, extractum carnis, or essence of beef, arrowroot, milk, wines and spirits. Such orders will be written on the diet sheet for the day of issue.

No diets, extras, or drinks will be issued unless entered on the diet sheet. It is filled in daily by the M.O. so as to show ordinary diets for the day following, and extras and drinks for the day of issue. The first entry is in full, and subsequent entries of the same diet are indicated by the initial letter of the diet day by day. Columns on the diet sheet in which no entry is made will day by day be cancelled by drawing a line through them.

Every erasure or alteration is to be initialled.

The date of discharge is filled in by the prescribing M.O., who also signs the sheet when completed.

The diet sheet is hung at the head of the patient's bed.

Prescribing M.O.s also enter on the diet sheet the hours during which patients are allowed to be out of bed, and if they may be employed on light hospital duty.

Prescribing M.O.s are held directly responsible for

all entries on their diet sheets, and, if called upon, will have to justify the necessity of the issue of all articles ordered by them.

A Medical and Surgical Case-book (Army Book 187) is kept at each hospital. In it the prescribing M.O. enters particulars of all important cases, and the daily amount of all extras ordered, with the reasons for giving them. He attaches his signature to the first and last entries of a case, and, when handing it over, will state the date and to whom the transfer is made, and will sign his name.

These case-books are not to be left in the wards.

All prescriptions are to be written legibly, and the instructions are to be written in English.

6. ORDERLY MEDICAL OFFICER.

The Orderly M.O. is detailed for duty by the P.M.O., and must be under the rank of Surgeon-Major, unless the number of available junior officers falls below four, when Surgeon-Majors will also be taken.

The Orderly M.O. is usually on duty for twenty-four hours, and remains at his post till personally relieved by the officer who succeeds him.

He remains in the room set apart for him except when called away on duty, or during the authorized hours for meals. At such times he leaves written directions where he is to be found.

He attends the provision store with the Quartermaster when supplies are received, and satisfies himself of their quality. He sees that diets and extras are properly cooked and served, and he visits the kitchen after the evening meal to see that the cooking utensils have been properly cleaned and put away.

He visits the wards at intervals and sees that order is maintained, and investigates reports or complaints made to him, whether by patients or others.

He performs all necessary and urgent duty towards the sick during the absence of the M.O. in charge of the cases, and deals with fresh cases as they arise. He also inspects the men to be discharged or detained for the day, to see that they are fit to go, and are in possession of

their kits, and that all soiled articles brought to hospital by the former have been washed.

He reports any insanitary condition of the hospital that has come under his notice.

At the end of his term of duty he forwards a report (on A.F. C 343) to the P.M.O.

II. STATION HOSPITALS.

1. ORGANIZATION.

Station hospitals are established for the reception and treatment of sick from all corps in garrisons, including those of the Militia, Yeomanry, and Volunteer forces when embodied, and such soldiers, seamen of the Royal Navy, Royal Marines, and others as may be admitted under special sanction.

All station hospitals are **subject to the authority of the General or other officer** in command of the troops ; but **the internal administration is under the officer in charge**, subject to the control of the P.M.O. of the district.

An establishment of officers of the A.M.S., W.O.s, N.C.O.s, and men of the M.S.C. is provided for each station hospital according to requirements.

The minimum establishment of hospital subordinates is :—

One N.C.O. as ward-master, steward, and compounder
One private as cook.

Ward orderlies in the following proportion :

When the number of sick is under 15	-	-	-	1
" " " over 15 and under 25	-	-	-	2
" " " " 25 " 35	-	-	-	3

and so on.

If necessary, patients, when able, may be employed on light hospital duties.

Except when non-dieted, as described below, station hospitals are dieted, as are general hospitals.

The equipment is also as for general hospitals. The equipment stores are held on inventory, as described under General Hospitals.

2. SPECIAL ORGANIZATION OF NON-DIETED HOSPITALS.

Non-dieted hospitals are opened at stations where small detachments of less than 100 men are quartered, or where militia are called out for training at a station where there is no military hospital.

They are organized, administered, and equipped in the same manner as a dieted hospital, except as detailed below, and the stores, equipment, supplies, and diet extras are similarly accounted for.

These exceptions are :—

Diets.—Diets are prepared from the ordinary company rations, but these will be supplemented when necessary, as prescribed by the Allowance Regulations.

Equipment.—When the strength of the detachment is 40 and under 100, hospital equipment is supplied on the following scale :

For 40 men	-	-	-	-	2 beds
„ 70 men	-	-	-	-	3 „
„ 90 men	-	-	-	-	4 „

Where the detachment is under 40, hospital equipment is not provided, but men admitted use the barrack bedsteads, bedding, and utensils. In this case a regimental N.C.O. is appointed to take charge of the equipment, which is held and accounted for by the O.C. the corps.

Field hospital equipment is supplied to Militia encamped where no building is available, and is drawn and held regimentally in accordance with the Militia Regulations.

Hospital Attendants.—These are supplied from the regiment in the proportion laid down under Station Hospitals.

Hospital Stoppages.—These are for extras only, and only on those days when such have been issued (see p. 22).

Medicines and Surgical Materials are supplied on requisition through the P.M.O. of the district, except when a civil practitioner is in charge and contracts to provide them himself.

3. MEDICAL OFFICERS OF A STATION HOSPITAL.

These are :—

M.O. in charge.

M.O.s attached for duty.

Orderly M.O.

Duties of the M.O. in Charge.

The M.O. in charge is responsible to the P.M.O. of the district.

He is responsible for all the duties of the hospital, and is the accounting officer for all buildings, stores, supplies, equipment, etc. If there is no Quartermaster, he places them in charge of the steward, who is responsible to him.

He makes a monthly inspection of all the equipment, stores, etc., as also of the Steward's books and stores, and he assures himself that there is no accumulation of articles that are liable to deteriorate.

When he is relieved, he hands over the buildings, equipment, supplies, and stores to his successor, and at each transfer there is present :—

1. A representative of the officer in charge of the barracks.
2. The Quartermaster (if attached).
3. The Steward.

He has the general supervision of the sick in the hospital, and of the medicines, diets, and extras. He distributes the duties between himself and the M.O.s under him, retaining some patients under his own care. All soldiers whom it is proposed to invalid for mental or other diseases are transferred to his care. He refers to the P.M.O. in all cases or matters of doubt or difficulty.

He visits the hospital at least twice daily.

The hours for visits at home stations are :—

In summer—i.e., April to September inclusive - 9 a.m.

In winter - - - - - 10 a.m.

Summer and winter - - - between 5 and 8 p.m.

He examines all men sent to hospital, and as soon as possible diagnoses their diseases and allots them to wards.

He writes the disease and the word 'Hospital' in ink on both the company sick reports (see p. 7). One

Morning State of Sick. Date _____

Hospital, at

[illegible]

Report of Death.—All deaths are *at once* to be specially reported to the officer commanding the corps, and to the officer commanding the station on this portion of the form, which is also to be used for all communications regarding a death or burial.

[illegible]

To

Medical Officer.

**(This portion of the Form can be used for any purpose where a nominal roll is necessary to communicate between the station hospital and the corps.)*

[illegible]

Medical Officer.

* On back of Form.

is sent back by the N.C.O. to the O.C. the corps, while the other is retained as an office record.

If a sick soldier is not likely to require treatment beyond the day of reporting sick, he is detained in hospital for that day only. His kit is not taken over by the Medical Department, and he is subsisted from the corps; but if at the evening visit he is found unfit for duty, he is regularly admitted and ordered hospital diet for the following day. **Notice in writing to this effect is sent to the O.C. his corps.** His kit is then taken over by the Medical Department and handed to the care of the Quartermaster.

Where there is no orderly M.O., it is arranged that a M.O. is available for the examination of recruits up to 1 p.m.

The M.O. in charge will furnish a daily state of sick in hospital (on A.F. A 27, see opposite page) to the O.C. the station. At the headquarters of a district this is sent to the P.M.O. for transmission to the G.O.C.

The names of men to be discharged are sent to the O.C. each corps (on A.F. B 256) as early as possible, in order that a N.C.O. may be sent to see that the men receive over their kits correctly, and to take them back to barracks at such hour after tea as may be ordered.

When a patient becomes dangerously ill, the M.O. in charge at once informs the C.O. of his corps, in order that his friends may be communicated with. He also informs the chaplain of the denomination to which he belongs.

When a man dies, the M.O. at once reports the death to the O.C. the corps to which the man belonged, as well as to the O.C. the station (on A.F. A 27), and states the day and hour after which the interment may take place.

When valuables are taken over from a patient for safe keeping, the M.O. in charge forwards the Quartermaster's (or the Ward-master's) acknowledgment of the same to the patient's C.O. In the event of the patient's death, he is responsible that his kit and valuables are only handed over to some one authorized by the C.O. to receive them.

The M.O. is responsible for the medical history sheets (see p. 88).

Vaccination and revaccination are performed at station hospitals, and the vaccination registers are there kept for all arms of the service.

When a corps leaves a station, the M.O. in charge detains all sick under treatment till they are well enough to rejoin the corps for duty.

In garrisons, camps, and stations the M.O. in charge, if senior M.O. at the station, **performs the duties of sanitary officer**, and is guided by the regulations for 'Sanitary Duties of Medical Officers.'

At the inspection of buildings and equipment by the R.E. officer, or officer in charge of barracks, the M.O. in charge nominates a M.O. to attend, and where no Quartermaster is attached, the M.O. in charge will, if possible, be present, or, if unable, will depute a M.O. to represent him. At such inspections and at transfers he furnishes the officer in charge of barracks with a certified statement, showing how articles of bedding, clothing, and patients' personal equipment in his charge are distributed.

Where there is no R.E. at the station, the M.O. in charge of the hospital may order urgent and necessary repairs to be executed at once by the contractor, and will in all such cases send a copy of his orders to the R.E. officer.

Where there is no Quartermaster attached, he also deals with damages to buildings, equipment, and stores.

Medical Officers Attached for Duty.

M.O.s attached for duty are under, and responsible to, the M.O. in charge, and are guided in their duties by the regulations for M.O.s attached for duty in general hospitals (see p. 12).

Orderly Medical Officer.

The orderly M.O. is guided in his duties by the regulations for the orderly M.O. in general hospitals (see p. 14), and on the termination of his tour of duty forwards his report to the M.O. in charge (on A.F. C 343).

STATISTICAL RETURNS.

All cases, whether treated in dieted or non-dieted hospitals, quarters, barracks, or civil hospitals, are to be shown in statistical returns. Cases transferred must be entered as transfers, and not as new cases.

A register of deaths is kept in general and station hospitals, in which all deaths, whether in or out of hospital, are entered. This information is used in compiling the annual returns.

Daily Returns.

A morning state of sick (on A.F. A 27) is furnished by the M.O. in charge from all hospitals to the O.C. the station. At the headquarters of a district this is sent to the P.M.O. for transmission to the General or other O.C.

Weekly Returns.

A weekly return of sick of all ranks is made by the M.O. in charge (on A.F. A 31) up to twelve (noon) each Friday, and posted to the W.O. not later than the following afternoon. A duplicate is sent to the P.M.O. of the district marked in red ink, 'Original sent to the War Office on [date].'

When, owing to the obscurity of the symptoms, a case cannot for a time be diagnosed, it will be recorded in the weekly returns as 'Not yet diagnosed.'

When a case is wrongly diagnosed, it will be entered in the next weekly return as 'Discharged otherwise,' and a fresh entry made in the column for admission. No second entry is made in the admission and discharge book, but the first diagnosis is crossed out, and the right one put in above it in red ink.

When a patient presents himself with two diseases, he is admitted for the more serious one; but if the second disease continue after the cure of the first, he will be 'Discharged otherwise,' and readmitted for the other disease both in the weekly return and in the admission and discharge-book.

The same is done when a second disease supervenes on the one for which the case was admitted.

Invalids from abroad are not shown in the weekly

returns, but in a separate weekly return headed 'Invalids from abroad.' They are considered as invalids until they are disposed of in one of the following ways:

By return to duty as effective men.

By discharge from the service.

By death.

Annual Returns and Reports.

These are furnished (on A.F. A 33) up to December 31 by the M.O. in charge of every hospital (except hospitals for women and children). They are permanent records, and are to be made as accurate as possible. They are to be forwarded to the P.M.O. of the district by January 31, and a duplicate copy is retained at the hospital.

Special Returns.

During epidemic seasons every case of infectious disease will be reported on the weekly return, and when more than one disease prevails epidemically at the same time, separate returns relative to each will be furnished.

All returns are to be carefully examined by the P.M.O., and returned, if necessary, for emendation.

HOSPITAL STOPPAGES.

By this term is meant the amount of pay that is deducted daily during the retention of a sick soldier in hospital. The amount so deducted is:—

For each man - - - - 7d. per day.

„ boy, *i.e.*, under 18 - - 6d. „

Exceptions.

If a soldier is admitted to hospital while undergoing punishment for an offence under the Army Act, no hospital stoppages are made, inasmuch as all pay has already been stopped for the offence.

In non-dieted hospitals stoppages are for extras only, at the rate of 4d. per day for all ages and ranks.

Militiamen detained in hospital under the authority of the G.O.C. after the expiration of preliminary drill, recruit drill, or training, are not liable to hospital stoppages.

SPECIAL SANITARY RULES ON THE OCCURRENCE OF INFECTIOUS OR CONTAGIOUS DISEASE.

The clothing of soldiers attacked with cholera or smallpox will be destroyed. Infected articles of men suffering from diphtheria or scarlet fever will be destroyed on the recommendation of the M.O., unless they can be disinfected by moist heat. In all cases of other infectious disease such articles of a soldier's kit as cannot be so disinfected will be dealt with in accordance with paragraph (b), p. 25.

During the prevalence of cholera, or when an outbreak of that disease is anticipated, M.O.s will conform to the special instructions on the subject (see Reg. A.M.S.).

When any infectious diseases occur among the occupants of officers', non-commissioned officers', or married soldiers' quarters, or in barrack-rooms, the bedding, clothing, etc., used by patients suffering from such diseases will, as a sanitary precaution, be treated according to the instructions contained below.

When a case of scarlet fever, enteric fever, erysipelas, yellow fever, puerperal fever, smallpox, cholera, or diphtheria occurs in any barrack-room or quarter, the following additional sanitary precautions will be carried out:—

(a) The rooms will be vacated, and the windows kept open for as long a time as practicable to ensure thorough ventilation.

(b) The furniture, floors, and all painted woodwork will be scrubbed with soap and hot water.

(c) The bedding and clothing in use will be disinfected, as laid down on p. 24, except those in use by patients suffering from smallpox or cholera, which will be destroyed. Carpets, curtains, etc., will be removed into the outer air, carefully beaten, brushed, and exposed to the air and sun for at least three days.

(d) The ceilings will be whitewashed.

(e) The walls, if papered, will be repapered, the old paper being first carefully scraped off. If not papered, they will be scraped and finished as before.

The M.O. in charge of the case will represent in writing to the O.C. the steps required to be taken under

sub-paragraphs *a*, *b*, and *c*. The O.C. will give the necessary instructions for the performance of the services.

The services alluded to in sub-paragraphs *d* and *e* will be carried out by the Royal Engineers on a certificate in writing from the principal or senior medical officer.

When considered advisable, in consequence of the occurrence in barracks or quarters of infectious disease other than the diseases named, the room in which the case occurred will be vacated, thoroughly cleaned and limewashed, and left unoccupied, with the windows open as long as practicable; when, in addition, it is deemed necessary to fumigate the room, one of the processes detailed on p. 29 will be adopted.

In barracks, quarters, and camps the straw or coir of the bedding used by a person suffering from any infectious disease prior to admission to hospital will be burnt unless the coir can be economically disinfected by moist heat; and the bedding, with all clothing which, in the opinion of the M.O. in charge of the case, has been exposed to infection will be disinfected in accordance with the instructions below. All soiled bedding and underclothing which has been in intimate contact with the sick will be immediately steeped in corrosive sublimate solution, and subsequently boiled and washed without removal to hospital for further disinfection. Such articles as are Government property will be handed over, after steeping in corrosive sublimate solution, to the officer in charge of barracks for the purpose of being boiled and washed, except in cases of cholera or smallpox, when they will be destroyed. Such articles of clothing as cannot be steeped, boiled, and washed will be disinfected as above.

In hospitals the bedding, clothing, etc., used by patients suffering from infectious diseases will be disinfected in accordance with the instructions given above. Whenever practicable, barrack bedding will be used for cases of cholera. All soiled bedding and underclothing which has been in intimate contact with the sick will be immediately steeped in corrosive sublimate solution, and subsequently boiled and washed, except in cases of cholera or smallpox, when the bedding, clothing, etc., of patients suffering from these diseases will be destroyed.

A supply of sheets, pillow-slips, shirts, and drawers, distinctively marked with the letter 'V,' will be set apart in hospitals solely for the use of patients suffering from venereal diseases. Such articles, when soiled, will be steeped in a solution of corrosive sublimate, and subsequently thoroughly rinsed in clean water on being sent to the laundry or contractor for washing.

In all efforts to secure disinfection of clothing, etc., medical officers will understand that no disinfection will be considered to be adequate unless carried out by means of moist heat at 220° Fahr. for one hour. No reliance must be placed upon disinfection by dry heat, as, to be efficient, an exposure for three hours to 284° Fahr. is required, and this heat is always destructive of fabrics.

(a) In stations where no proper disinfecting apparatus by moist heat is provided, local arrangements will be made with the civil sanitary authorities to have infected clothing disinfected by moist heat.

(b) In some instances the plan of exposing articles of clothing to the air and sun for a week, and subsequently beating and brushing them, may be adopted; but in no case may this procedure be considered as a sufficient alternative for proper disinfection by moist heat.

When fumigation is considered to be necessary, one of the processes laid down will be adopted.* Care should be invariably taken that sufficient quantities of the various agents are used; the several quantities laid down are respectively sufficient to disinfect 1,000 cubic feet of space. Fumigation must in no case be considered a substitute for disinfection.

All processes of disinfection by fumigation will be carried out under the orders and supervision of a M.O., and, if possible, by subordinates attached to a hospital; an experienced N.C.O. will always attend, who will be held responsible for any damage that may be incurred by preventable causes.

When it is necessary to move a case of infectious disease to hospital, the M.O. in attendance will make immediate application to the officer in charge of transport for an ambulance to convey the patient, at the same

* See pp. 28 and 29.

time stating the nature and urgency of the case; *the ambulance or other conveyance will be disinfected before being again used.*

HOSPITAL DIETS.

Milk Diet.

Bread	-	-	-	-	-	12 ounces.
Rice	-	-	-	-	-	2 "
Milk (3 pints)	-	-	-	-	-	60 "
Sugar	-	-	-	-	-	1 "
						<hr/>
Total	-	-	-	-	-	75 "

Plain Milk Diet.

Milk	-	-	-	-	-	3 pints.
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Beef-tea Diet.

Beef without bone*	-	-	-	-	-	8 ounces.
Bread	-	-	-	-	-	14 "
Salt	-	-	-	-	-	$\frac{1}{2}$ "
Tea	-	-	-	-	-	$\frac{1}{4}$ "
Sugar	-	-	-	-	-	$1\frac{1}{2}$ "
Milk	-	-	-	-	-	6 "
Butter	-	-	-	-	-	1 "
						<hr/>
Total	-	-	-	-	-	$31\frac{1}{4}$ "

Chicken Diet.

Fowl without bone*	-	-	-	-	-	8 ounces.
Bread	-	-	-	-	-	16 "
Potatoes	-	-	-	-	-	8 "
Salt	-	-	-	-	-	$\frac{1}{2}$ "
Tea	-	-	-	-	-	$\frac{1}{4}$ "
Sugar	-	-	-	-	-	$1\frac{1}{2}$ "
Milk	-	-	-	-	-	6 "
Butter	-	-	-	-	-	1 "
						<hr/>
Total	-	-	-	-	-	$41\frac{1}{4}$ "

* Or with bone, 10 ounces.

Convalescent Diet.

Beef or Mutton, without bone*	-	8 ounces.
Bread - - - - -	-	16 "
Potatoes - - - - -	-	8 "
Barley - - - - -	-	1 $\frac{1}{2}$ "
Salt - - - - -	-	$\frac{1}{2}$ "
Tea - - - - -	-	$\frac{1}{4}$ "
Sugar - - - - -	-	1 $\frac{3}{4}$ "
Milk - - - - -	-	6 "
Vegetables (taken as cabbage)	-	4 "
Butter - - - - -	-	1 "
Flour - - - - -	-	$\frac{1}{4}$ "
Total - - -		47 $\frac{1}{4}$ "

Roast Diet : Joint, Chop, or Steak.

Beef, mutton chop, or steak, without bone*	-	8 ounces.
Bread - - - - -	-	18 "
Potatoes - - - - -	-	8 "
Salt - - - - -	-	$\frac{3}{4}$ "
Tea - - - - -	-	$\frac{1}{4}$ "
Sugar - - - - -	-	1 $\frac{1}{2}$ "
Milk - - - - -	-	6 "
Vegetables - - - - -	-	4 "
Butter - - - - -	-	1 "
Total - - -		47 $\frac{1}{2}$ "

Varied Diet.

Beef or mutton, without bone†	-	12 ounces.
Bread - - - - -	-	18 "
Potatoes - - - - -	-	16 "
Salt - - - - -	-	$\frac{3}{4}$ "
Tea - - - - -	-	$\frac{1}{4}$ "
Sugar - - - - -	-	1 $\frac{1}{2}$ "
Milk - - - - -	-	6 "
Vegetables - - - - -	-	4 "
Butter - - - - -	-	1 "
Total - - -		59 $\frac{1}{2}$ "

* Or with bone, 10 ounces.

† Or with bone, 15 ounces.

FILTERS.

The Pasteur-Chamberland Filter consists essentially of one or more hollow tubes of specially-prepared material closed at one end and set upright in a glass or other vessel. The water filters from without inwards. Where the water is filtered under pressure, the filter can be attached to the main or service-pipes, and the output will vary directly with the pressure of the water and the number of filter-tubes. Where such pressure is not available, the output depends on the head of water under the pressure of which the filter is working. This is made as large as possible by making the filter-tubes deliver from the top after they are full, and so flush the delivery-pipe. In this way a syphon action is set up, and the rate of flow is determined by the difference in the legs of the syphon so formed.

Maignen's 'Filtre Rapide' consists essentially of a layer of asbestos cloth, on which is deposited a layer of finely-powdered filtering medium (patent powdered carbo-calcis), above which, again, is a thick layer of a coarser medium (granular carbo-calcis). The water passes through first the granular, then the powdered carbo-calcis, and finally through the asbestos cloth into the receiving chamber. The powdered carbo-calcis is deposited by being mixed with the first water poured into the filter.

The Berkfeldt Filter is also worthy of notice.

DISINFECTION.

The following are used in military stations :—

(a) Carbolic Acid.

Five per cent. solution of the crystal form. For disinfecting cholera dejecta and tuberculous sputum,

(b) Chloride of Lime.

Four ounces to a gallon of soft water. One pint for disinfection of excreta in cholera, enteric fever, etc.; leave in contact for ten minutes.

(c) Corrosive Sublimate.

One in 1,000 tinted with aniline-blue or permanganate of potash. It is generally made thus :

Corrosive sublimate	-	-	-	$\frac{1}{2}$ ounce.
Hydrochloric acid	-	-	-	1 "
Water	-	-	-	3 gallons.

A most reliable disinfectant.

(d) *Quicklime.*

Used in solid form. For disinfection on a large scale—*e.g.*, middens, foul channels, etc.

(e) *Sulphate of Iron.*

Ten per cent. solution. Dejecta, etc., should remain in contact for at least one hour.

(f) *Izal (for use in Hospitals only).*

Five per cent. solution or more. Half an hour's contact is required for disinfection of dejecta, etc. Is an excellent disinfectant for ward utensils, etc.

FUMIGATION.

(a) For an ordinary room compressed sulphur dioxide will be employed. One 20-ounce cylinder is sufficient for a room of 12 feet cube, *i.e.* about 1,700 cubic feet. The room is sealed up in the ordinary way, and the cylinder, being taken in the left hand, the soft lead vent-pipe is cut off by one stroke of the knife and the cylinder placed, opening downwards, in a wash-basin. The operator escapes from the room at once by the open door, which is immediately sealed from outside. The liquid that escapes evaporates in about a quarter of an hour; but the room is left closed for eight hours, after which it is opened and the sulphurous gas allowed to escape.

(b) For a mortuary chlorine may be used. The following will generate sufficient chlorine gas for 1,000 cubic feet of space :

Common salt	-	-	-	8 ounces.
Oxide of manganese (powder)	-	-	-	2 "
Sulphuric acid	-	-	-	4 "
Water	-	-	-	4 "

The water and acid are mixed together and poured over the other ingredients in a delf basin placed in a pipkin of hot sand. The vessel should be suspended as near the ceiling as possible, as the specific weight of the gas is high.

PART II.—WAR.

**DUTIES OF THE OFFICERS OF THE ARMY
MEDICAL DEPARTMENT.****DIRECTOR-GENERAL.**

BEFORE a field force is ordered for service abroad, the D.-G., in addition to the advice usually tendered to the War Department on matters connected with the hospital and ambulance arrangements of the Army, will, when required to do so, give his opinion in writing on all matters connected with the country, climate, productions, rations, clothing, shelter, and sanitary arrangements and precautions, and on all matters bearing on the health of the troops.

The D.-G. will issue to the P.M.O. of every force on active service such code of instructions for his guidance in all matters connected with the above as he may see necessary to meet the special circumstances of each case.

ARMY MEDICAL STAFF.**DUTIES IN THE FIELD.**

In the case of a force on active service P.M.O.s are employed in the following capacities :—

P.M.O. of the field force.

P.M.O. at the base of operations.

P.M.O. of each division.

(There are three divisions in an Army Corps.)

It is well to bear in mind that M.O.s may at any time be called upon to perform many of the duties of a P.M.O.

PRINCIPAL MEDICAL OFFICER OF THE FIELD FORCE.

The P.M.O. of a field force has his **headquarters with the General of Communications**, but is available for consultation with the G.O.C. in Chief, to whom he gives advice in writing in reference to rations, clothing, shelter, sanitary arrangements and precautions for preventing disease, and on all other subjects bearing on the health and physical efficiency of the troops.

He is assisted by a staff, as laid down in 'Field Army Establishments.'

He has, under the orders of the General of Communications, **supreme control of**, and responsibility for, all medical arrangements connected with the force—*e.g.*, in the movement of troops to the front, of sick and wounded towards the base, and the transport of medical and surgical stores and supplies.

He takes over all field hospitals left behind with sick and all fresh hospitals formed in rear of the army, and is responsible for the disposal of all bearer companies and field hospitals held in reserve or not attached to divisions.

He sees that the advanced depôt of medical stores is kept constantly supplied, and that the depôt is moved forward as the troops advance and kept within easy reach of the field hospitals.

On receiving intimation from the P.M.O. of a division as to the number and class of cases to be removed from the field hospitals, he will at once make arrangements with the G.O.C. the line of communication **as to their transport**, specifying, as far as possible, the amount and kind of sick carriage required.

He will keep himself constantly informed as to the accommodation available in the general hospital at the base and the hospitals on the line of communication, and will, when practicable, give the M.O.s in charge of hospitals timely warning of the day and hour of arrival of parties of sick and wounded at different places along the route.

He will make all necessary arrangements, under the orders of the G.O.C., and, in conjunction with the officers concerned, for the transport, equipment, stores, and

supplies that may probably be required in connection with medical organization.

He furnishes the following returns :—

Daily.—Consolidated return of sick and wounded (A.F. A 28) to the G.O.C. in Chief.

At the End of the Campaign.—A general return of sickness and casualties in the force (A.F. A 29) to the War Office.

Sanitary Duties.

With the sanction of the G.O.C., he issues immediately on the opening of a campaign, as well as at such other times as may appear to him necessary, such instructions regarding sanitary measures for protecting the health of the troops as he may consider requisite for the guidance of M.O.s.

PRINCIPAL MEDICAL OFFICER AT THE BASE OF OPERATIONS.

The P.M.O. at the base has control, under the O.C. at the base and the P.M.O. of the field force, over all hospital establishments, including hospital ships at the base, and he is assisted by a staff. He makes all arrangements for the reception of sick and wounded from the front, for the discharge to the depot of such men as do not require further treatment, and for sending invalids to England or elsewhere.

He inspects all hospitals, transport ships, and the depot of general medical stores at the base, and sees that the supply of medicines and materials is kept up.

He sends a weekly sanitary report to the P.M.O. of the field force, who—

(1) Informs the G.O.C. in Chief.

(2) Sends a copy to the D.-G.

He sends also such returns to the P.M.O. of the field force as may be directed by him.

PRINCIPAL MEDICAL OFFICER OF A DIVISION.

The P.M.O. of a division will be on the staff of, and remain at the headquarters of, the division; will advise the G.O.C. the division in all matters affecting the

health of the division, and will receive and transmit orders from him and from the P.M.O. of the field force.

He is assisted by a staff.

He has **command of the A.M.S. and the M.S.C. attached to the division**, and is responsible for the distribution of the bearer companies and field hospitals attached to the division.

He **frequently inspects** the bearer companies and field hospitals, and ascertains that medicines, surgical appliances, food supplies, equipment, shelter, and transport are in sufficient quantity for the wants of the sick and wounded.

He sees that M.O.s attached to corps do not allow sick and unfit men to remain with the corps and encumber the front.

He **guards against field hospitals becoming overcrowded**, and endeavours to keep up a steady removal towards the base of all such men as are not likely to become speedily effective, while careful that no men likely to become efficient in a reasonable time are allowed to pass to the rear. To this end he keeps the P.M.O. of the field force informed of the number and description of the sick and wounded requiring removal towards the base, and specifies, if possible, the kind and quantity of sick carriage necessary.

When an engagement is expected, he arranges with the G.O.C. the division, and points out to the M.O.s concerned, the arrangement of bearer companies, collecting and dressing stations, and field hospitals, and sees that the ambulances, etc., are fully equipped and all arrangements made for succouring the wounded in the quickest and most efficient manner. In the absence of orders from the G.O.C., he acts on his own responsibility.

Sanitary Duties.

The P.M.O. or M.O. detailed for the purpose **accompanies the staff officer** appointed to select buildings for the use of troops, whether as quarters, hospitals, or stables.

He **examines into the sanitary condition** of such buildings as regards cleansing, nuisances, drainage, ventilation, lighting, water - supply, lime - washing, cubic

contents, and all other matters connected with the buildings likely to affect the health of the troops or the sick.

He advises the chief staff officer on all such subjects, sending copies of all reports he may have considered it necessary to make to the P.M.O. in the field. He points out in his reports any defect requiring remedy, and states the number of troops or sick that may be accommodated in the buildings.

He examines into the sanitary conditions of towns or villages about to be occupied, and makes such recommendations as may be required as regards cleanliness, nuisances, etc.

In selecting a site for an encampment the P.M.O. accompanies the staff officer appointed on his inspection, and gives his opinion (in writing, if necessary) on the salubrity or otherwise of the position, with any recommendations he may have to make respecting—

Drainage.

Preparation of the ground.

124th Rifle Bde Distance of tents or huts from each other.

9th Fusiliers Number of men in each.

State of cleanliness of the surrounding ground.

Ventilation.

Water-supply.

Position, etc., of latrines and slaughtering places.

Disposal of refuse.

Burial of the dead and disposal of carcases.

In communication with the staff officer concerned, he examines and reports on the water-supply as to the amount, quality, best sources of supply, and precautions required in collecting, storing, purifying, and distributing the same.

He superintends the sanitary arrangements of the camp and of occupied towns. He sees that the surface and vicinity are kept clean and free from nuisances, that defects of surface drainage are remedied, that the dead are properly interred and carcases and offal disposed of, that the latrines are properly regulated, and that the water-supply is kept pure.

He informs himself as to the sanitary condition of hospitals, huts, tents, houses, and other buildings in occupation, and recommends (in writing, if necessary)

such precautionary measures for the prevention of disease as he may consider necessary as regards cleansing, draining, prevention of overcrowding, ventilation, lighting, lime-washing, removal of nuisances, improvement in water-supply, and all other local matters affecting the health of the troops or the sick.

He reports to the chief staff officer any defects or negligence in carrying out the sanitary duties of the camp.

He makes a daily inspection of the camp, and especially informs himself of the health of the troops. On learning of the presence of disease, he immediately examines into the cause of the same, to ascertain whether it proceeds from defects in cleansing, drainage, nuisances, overcrowding, defective ventilation, water-supply, dampness, marshy ground, or any other local cause; or from bad or deficient food, intemperance, unwholesome liquors, fruit, defective clothing or shelter, exposure, fatigue, or any other general cause.

He reports immediately to the chief staff officer on such causes, with the measures he proposes for their removal, and sends a copy of his report to the P.M.O. of the field force.

He also makes daily reports on the progress or decline of the disease, and on the means adopted for its removal, so long as necessary.

When troops are on the line of march, the P.M.O., or M.O. specially appointed by him, accompanies the staff officer who precedes the troops, and collects all available information as to the medical topography of the district, especially in reference to proposed camping-grounds, etc. (see p. 64, etc.).

During epidemic seasons he indicates the best means of mitigating or preventing attacks of disease on the march. Before commencing a march troops should be supplied with some refreshments, especially during epidemic seasons.

A P.M.O. in charge of a general hospital or a division in the field makes full report to the P.M.O. of the field force as to the sanitary state of the troops and hospitals, and on all matters relating to the health and efficiency of the men at such intervals as the P.M.O. may appoint.

STATISTICS IN THE FIELD.

1. DAILY.

At the Front.—(a) The M.O.s in charge of field hospitals will send a daily state of sick and wounded (A.F. A 28) to the P.M.O. of their division, or, if with corps troops, to the P.M.O. of the field force. (These returns are not required from hospitals on the lines of communication unless specially ordered.)

(b) The P.M.O.s of divisions will send consolidated daily states (A.F. A 28) of the sick and wounded in the field hospitals under their charge—

(1) To the G.O.C. the division (for his information and that of the G.O.C. in chief).

(2) To the P.M.O. of the field force.

(c) The P.M.O. of the field force will send a consolidated daily state of the sick and wounded to the G.O.C. in chief.

At the Base.—The M.O.s in charge of general hospitals or hospital ships will send the daily state of sick and wounded (A.F. A 28) to the P.M.O. at the base for transmission to the O.C. there. They will also furnish to the O.C. there rolls of men admitted to, and discharged from, hospital (A.F. A 36).

2. WEEKLY.

The M.O. in charge of **every** hospital in the field will furnish to the P.M.O. of the field force a weekly return (A.F. A 29) from the day the troops take the field until the operations are terminated. These returns will be sent to the P.M.O. of the field force through the following channels:—

1. From field hospitals of divisions, **through the P.M.O. of the division.**
2. From field hospitals with corps troops, **direct.**
3. From hospitals on the lines of communication, **direct.**
4. From general hospitals or hospital ships, **through the P.M.O. at the base.**

Weekly Sanitary Report.—A P.M.O. of a division or

base hospital will send a weekly sanitary report to the P.M.O. of the field force, who

- (1) Informs the G.O.C. in chief, and
- (2) Sends a copy to the D.G.

3. SPECIAL.

(a) As soon as possible after an action M.O.s in charge of field hospitals will furnish **rolls in duplicate** (A.F. A 6) of all officers and men wounded, stating shortly and accurately the nature and severity of the wound. One of these is sent *to the P.M.O. of the field force direct for the information of the G.O.C., and the other to the P.M.O. of the division for transmission to the W.O.* In the case of corps troops both copies are sent to the P.M.O. of the field force.

(b) M.O.s in charge of all **hospitals** will, *when called upon*, furnish returns (on A.F. A 7) to their P.M.O.s, who prepare a consolidated state of the whole, and forward it, with the originals, to the P.M.O. of the field force, who forwards it to the **W.O.**

4. ON THE TERMINATION OF THE CAMPAIGN.

The P.M.O. of the field force will furnish a general return of sickness and casualties to the **W.O.** (on A.F. A 29).

OFFICERS IN MEDICAL CHARGE OF UNITS.

A medical officer will be attached to each staff or regimental unit, as shown in Field Army Establishments (Home Defence or Service abroad), to afford such temporary assistance to sick and wounded as may be required in camp, on the line of march, and in action.

He will be guided by the instructions laid down for officers in medical charge of effective troops in quarters as far as they are applicable in the field.

He will be under the orders of the O.C. the corps to which he is attached, but will receive instructions from, and be at the disposal of, the P.M.O. of the division in which he is serving.

His baggage will be carried in the regimental transport, and he will be furnished with a servant from the ranks of the corps to which he is attached.

He will be provided with the following personnel from the unit or corps to which he is attached :—

1 corporal.

1 private as orderly.

and in the case of home defence the following medical and surgical equipment :—

For Staff Unit.

1 Field Medical Companion, with water-bottle.

1 surgical bag for cavalry.

For Regimental Unit.

1 Field Medical Companion, with water-bottle.

1 surgical haversack, with water-bottle.

1 pair of field medical panniers (not issued for home defence).

Also, if with cavalry or mounted infantry :—

1 surgical bag for cavalry.

A M.O. with a detached company, troop, or battery will be provided with one private (as orderly) from the unit and the following medical and surgical equipment (Home Defence) :—

1 Field Medical Companion and water-bottle.

1 surgical haversack and water-bottle.

The officer in medical charge of a unit who is not supplied with field medical panniers will obtain from the P.M.O. of the district in which the unit mobilizes one hospital diary (Army Book 39), and certain writing materials and envelopes.

On mobilization being ordered, the medical and surgical equipment allotted to the officer in medical charge of a staff or regimental unit is despatched to the place of mobilization of the unit. This officer will hand it over for carriage in the regimental transport, but it will remain in his charge, and the O.C. will arrange that it is at all times at the disposal of the M.O. It will be replenished, when necessary, by requisition on the nearest depôt of medical stores or field hospital.

When men are reported sick, they will be sent to the M.O., with the usual company sick reports (A.F. B 256) in duplicate (see p. 7). If they are passed to hospital, one copy will be sent with them, and the other, on which the man's disease and destination will be marked, returned to the O.C. The M.O. will enter their names, diseases, and disposal in his hospital diary (Army Book 39), but he will not be required to keep any other record, or furnish returns and reports except such as may be called for by the P.M.O. of the division.

The M.O. will, while placing every check against men reporting themselves sick unnecessarily or passing to the field hospitals without due cause, at the same time be careful that no man requiring hospital treatment, or really unfit for duty, is allowed to remain at the front with his corps.

When an action is expected, the trained stretcher-bearers, in the proportion of two per company, etc., will be placed at his disposal. They will leave their rifles and valises in the carts, put on the stretcher-bearers' armlets, take the stretchers, and proceed under his directions to the scene of action. The orderly will also accompany him, carrying the Field Companion and water-bottle, and the surgical haversack. The corporal will remain in charge of the field medical panniers (not issued for Home Defence), so that they may be made available during, or immediately after, the action.

In severe actions the M.O. will only afford such

temporary aid to the wounded as may be within his power until they are succoured by the bearer companies, and will not undertake any serious surgical operation.

The M.O. and the regimental bearers will never lose touch of their corps during an action, but keep in close proximity to them, and will on no account attempt to carry back the wounded for long distances, or in any case beyond or in rear of the collecting-stations formed by the bearer companies.

WAR ESTABLISHMENT (HOME DEFENCE).

BEARER COMPANIES AND FIELD HOSPITALS.

The men of bearer companies and field hospitals will be assembled at the place of mobilization.

The personnel for the regimental transport will in both cases be furnished by the Army Service Corps, and will practically form part of each unit. Such transport as is marked with the Geneva cross will not in civilized warfare be taken away or used for any other purpose during the continuance of the campaign.

The M.O. in command of a bearer company or field hospital (in the case of the latter, through the Quartermaster) will draw, on requisition, all necessary stores and equipment; will satisfy himself that the personnel, stores, and equipment are complete in every particular, and report to that effect to the W.O.

He is responsible, and will account for, all equipment, stores, and clothing held by the bearer company or field hospital, including the Army Service Corps attached.

M.O.s attached for duty will act under the M.O. in command, and will carry out the usual duties of M.O.s as far as they are applicable in the field.

The Quartermaster of a field hospital will keep the accounts of all equipment, stores, etc., and the warrant officer of a bearer company, or of one half of a field hospital when divided, will perform the duties of a Quartermaster and keep similar accounts.

Bearer companies will be associated with, and encamped in close proximity to, the field hospitals, in order to furnish every assistance in pitching the field hospital tents when a camp is formed, in dealing with the sick and wounded, and in providing hospital guards; but while the campaign lasts the bearer company organization will be maintained separate and distinct from that of the field hospitals.

A bearer company will be attached to each brigade, but

will be fully at the disposal of the G.O.C. the division, who will detach or mass them as necessity may require.

All medical establishments in the field are distinguished by a red cross flag by day and by two white lamps side by side at night. Directing red cross flags will be placed to mark the road between the collecting stations, dressing stations, and field hospitals.

Bearer companies with the regimental aid, and field hospitals, form respectively the **first and second lines of assistance.**

When an engagement is expected, the P.M.O. of a division will arrange with the G.O.C., or, in the absence of orders from the G.O.C., will on his own responsibility give instructions, and point out to M.O.s in command of bearer companies or in charge of field hospitals, the most suitable positions for the collecting and dressing stations of the bearer companies, and for pitching the field hospitals; but in the case of bearer companies, when no orders have been received from the G.O.C. or the P.M.O., the M.O. in command of the company will on his own responsibility organize the collecting and dressing stations, and take such measures as may be necessary for the relief and transport of the sick and wounded.

DISPOSITION AND DUTIES OF A BEARER COMPANY IN ACTION.

Collecting-Station.

The collecting-station should be placed as near the front as possible (probably about 800 or 1,000 yards from the enemy), so that the bearers may not have to carry the wounded farther than can be helped, the object being to avoid excessive fatigue to the bearers and delay in the collection of the wounded. It should be under shelter near a road, and its position marked by a red cross flag. It is placed under the charge of a sergeant, accompanied by the bugler, the former of whom has a Field Medical Companion and water-bottle, with a small reserve of bandages and first dressings to replenish the surgical haversacks of the bearers. The ambulance-wagons of the first line ordered to rendezvous here will be formed up in line at close interval, with the horses'

heads to the rear. The wagon orderlies will get out the stretchers, surgical haversacks, and water-bottles, and prepare the wagons for the reception of wounded.

Bearers.—The bearers of the company will be formed up here in stretcher squads. The Nos. 3 will fetch the stretchers, and the Nos. 4 will fetch and retain the surgical haversacks and water-bottles.

The bearers, thirty-two in number, form eight stretcher squads in two sections of four squads, each in charge of a sergeant. A surgeon-captain or surgeon-lieutenant is in command of the whole of the bearers.

As soon as the bearers are ordered to search for wounded, the squads extend and advance independently in charge of the Nos. 4. As a patient is approached, the Nos. 2 and 4 run out and attend to his wound, **making use of the patient's own first field dressing** as far as possible, while the Nos. 1 and 3 prepare the stretcher. The patient is then lifted on to the stretcher, carried back to the collecting-station, and placed in an ambulance-wagon. The Nos. 2 will carry his arms and accoutrements, which will accompany him back throughout to the base. Patients whose injuries permit may also be carried back by improvised seats, or walk back with assistance to the collecting-station. Regimental stretcher bearers may also carry back wounded to the collecting-station.

Bearers should take advantage of cover, and not expose themselves unnecessarily, but they should also take advantage of any temporary diminution of fire to give assistance to and carry wounded men under cover until the field is safe enough for them to be carried back to the collecting-station. Woods, ditches, and all cover must be carefully searched, as a wounded man naturally attempts to get under shelter. After dark, the lanterns provided in the equipment will be used for this purpose.

After the field has been cleared of wounded, the bearers and ambulance-wagons of the first line retire to the dressing-station, where the cooks will have food prepared, and the bearer company will rendezvous with the brigade to which it is attached.

Dressing-Station.

The dressing-station should be, if possible, out of fire, near a road and water-supply, and so placed as

neither to impede, nor be hampered by, the movements of the troops engaged. Advantage should be taken of buildings or other shelter.

The position of the dressing-station will necessarily vary according to circumstances, but will probably be about 2,500 yards from the enemy. The wagons and carts containing the medical and surgical equipment and comforts are assembled here and unpacked, the operating-tent pitched, opening to the front (should no building be available), trench-kitchens dug, food prepared, and everything made ready to attend to the wounded as they are brought in from the front.

As soon as the order to form the dressing-station is given, the dressing-station party, detailed beforehand, will separate from the rest of the company, and will form the dressing-station under the orders of the O.C. The wagons and carts will be unpacked, the two field medical panniers placed inside the tent, their contents made ready for use, the flaps of the panniers themselves arranged to form the operating-table, and the remainder of the equipment placed on the ground between the tent and the wagons so as to be available for use as required.

At ten paces from the front of the opening of the tent, and at ten paces from each other, are placed two red cross directing-flags, and two similar flags, one on each side in a line with the others, will be placed twenty paces from them. The outer flags will be moved farther apart, if necessary, to mark the extent of ground occupied by the wounded.

These four flags mark the front of the dressing-station, the space between the two inner ones being, as it were, the entrance. In front of this space the ambulance-wagons reverse, and are unloaded of the wounded by the dressing-station party and wagon orderlies. Between the two flags on the right, and in rows, following somewhat the arrangement of beds in a hospital ward, the severely wounded are laid, while those less seriously wounded are placed between the two flags on the left.

The rifle and accoutrements of each patient are laid on the ground at his feet.

Each patient, after treatment, has a specification tally (Army Book 166) attached to his clothes by the officer,

specifying his rank, name, number, regiment, injury, and treatment, and any precautions required in transport; name and injury to be also entered in the counterfoil of the tally-book.

After their wounds have been dressed, the patients are sent back to the field hospital by the ambulance-wagon of the second line or other sick carriage. After their transfer to the field hospital, the ambulance-wagons and wagon orderlies return to the dressing-station.

The position of the dressing-station, like that of all hospital establishments in the field, is indicated by a red cross flag by day, and by two white lights side by side at night.

Ambulance-Wagons.

The ambulance-wagons will be employed for the conveyance of wounded from the collecting-station to the dressing-station (wagons of the first line), and from the dressing-station to the field hospital (wagons of the second line).

The number of ambulance-wagons for a bearer company is ten, and the proportion of them employed in the first or second line is at the discretion of the M.O. commanding the bearer company. It is probable that the whole number would be employed in the first line until the field had been cleared of wounded. The ambulance-wagons of the second line may be supplemented by local transport. Each ambulance-wagon is in charge of an orderly. Five of these orderlies are corporals and five privates.

Directing-flags are placed at intervals between the collecting-station and dressing-station, and also between the dressing-station and field hospital.

It must be remembered that the object is to make the bearer company as mobile as possible, and that in case of a rapid advance patients may be attended to and left behind to be taken to the field hospital while the dressing-station is advanced. Under certain circumstances, also by the acquisition of extra stores and equipment, a bearer company may take up the duties of a field hospital.

In action the company is divided thus:—

(i.) Two stretcher sections, under one surgeon-captain

or surgeon-lieutenant; each section consists of one sergeant and sixteen privates.

(ii.) A collecting-station, where a sergeant with a field companion in his charge, and a bugler, will be posted.

(iii.) The ambulances, to which are attached five corporals and five privates.

(iv.) A dressing-station under the surgeon-major assisted by—

One surgeon-captain or surgeon-lieutenant.

Sergeant-major.

One sergeant as compounder.

One sergeant.

One corporal.

And four privates (one a cook).

The remainder, *i.e.*, the quartermaster-sergeant in charge of the baggage and supplies, with two privates employed as cooks for the company, and the three officers' servants and one supernumerary are in rear of the dressing-station.

The bearers are supplied from the reserve of the Medical Staff Corps or from the Militia Reserve.

Medical and Surgical Equipment for Bearer Company (Home Defence).

1 Field Medical Companion and water-bottle.

8 surgical haversacks and water-bottles.

1 pair of field medical panniers.

2 field fracture-boxes.

Regimental Transport for Bearer Company (Home Defence).

4 forage-carts.

1 water-cart.

10 ambulance-wagons.

Making a total of 15 wagons and carts, with 25 drivers and 50 draught-horses. Add 6 riding-horses of officers, warrant officers, and sergeant of A.S.C. Total horses, 56.

*Loads of Bearer Company Vehicles (Home Defence).
Abridged.*

No. 1 Cart :

- 2 field stationery-boxes.
- 2 medical comfort panniers.
- 4 stretchers.
- 2 field fracture-boxes.
- 1 Field Medical Companion.
- 1 pair field medical panniers.
- 8 surgical haversacks.
- 9 water-bottles.
- 1 pannier of veterinary stores.

No. 2 Cart :

- 4 canteen panniers, A, B, C, and D, containing kettles, pannikins, saucepans, spoons, tow, towels, needles, thread, twine, lamps and lanterns, oil, field hospital close stools, chisels, hammer, etc.
- 4 stretchers.
- Red cross flags, lanterns, and poles.
- 2 field hospital filters and charcoal.
- Entrenching tools, etc.

No. 3 Cart :

Contains mainly baggage of officers and men, with ordnance stores and material for A.S.C.

No. 4 Cart :

Contains one day's rations, forage and wood, ten camp-kettles, butcher's implements, etc.

For full information see Loads tables, 'Field Service Manual,' *Medical Services*.

WAR ESTABLISHMENT (HOME DEFENCE). BEARER COMPANY.

Ranks.	Personnel.							Horses.		
	Officers.	Warrant Officers.	Staff Sergeants and Sergeants.	Artificers.	Buglers.	Rank and File.	Total.	Private, or Provided under Allowance Regulations.	Public.	
									Riding.	Draught.
<i>Army Medical Staff.</i>										
Surgeon-Major	1	..	..	..	..	..	3	1	..	..
Surgeon - Captains or Lieutenants	2	..	..	..	..	..		2	..	..
<i>Medical Staff Corps.</i>										
Warrant Officer	1	..	..	..	..	1	..	1	..
Quartermaster-Sergeant Compounder	1	..	..	..	6	..	..	..
Sergeants	4	..	..	..		..	..	..
Bugler	1	..	1	..	..	..
Corporals	6	53	..	..	..
Privates	8		..	..	..
„ as Cooks	3		..	..	..
„ „ Bearers	32		..	..	..
„ „ Servants	3		..	..	..
„ „ Supernumry.	1		..	..	..
Total	3	1	6	..	1	53	64	3	1	..
								4		
<i>Transport attached from Army Service Corps.</i>										
Warrant Officer	1	..	..	..	..	1	..	1	..
Sergeant	1	..	..	..	1	..	1	..
Collarmaker	1	..	..	2	..	..	..
Shoeing and Carriage Smith	1	..	..		..	..	..
<i>Rank and File.</i>										
Corporal	1	31	..	..	..
2nd Corporal	1		..	..	..
Drivers { as Drivers	25		..	..	50
„ „ Bâtman	1		..	..	..
„ „ Cook	1		..	..	..
„ „ Supernumeraries	2		..	..	..
Total	1	1	2	..	31	35	..	2	50
								52		

J. J. Fotheringham - M.D.
HOSPITALS IN THE FIELD.

MAJOR, A.M.S.

FIELD HOSPITALS. O, C, No. 4, BEARER C

Field hospitals are organized in a similar way to bearer companies. Their position is indicated by a red cross flag by day and two white lights side by side at night. The number of patients provided for in a field hospital is 100.

A field hospital is not provided with ambulance transport, but the stores are so packed and arranged in the G.S. waggons that it is easily divisible into two halves, each capable of providing for fifty patients. When so divided, the W.O. will perform the duties of Quartermaster to one half.

A field hospital is non-dieted. Wounded must therefore be supplied with medical comforts, etc., out of its stores until rations can be drawn for them.

Ordinary sick sent to a field hospital take their field ration for the day with them, which is cooked according to the requirements of each individual case, and supplemented by such extras as may be ordered by the M.O.s. A second field ration for the day may be drawn for a man sent without his ration.

All extras must be entered in Army Book 39, by the prescribing officer, and the entry signed by him.

The kits, arms, and accoutrements of sick accompany them, and the arms and accoutrements of wounded are sent back with them. These are all taken over by the pack storekeeper, and are passed to the rear with the patient when he leaves.

Before an action a field hospital is cleared of all sick and wounded capable of removal to the rear, to make room for the wounded in the engagement.

When a field hospital of a division, on account of the number of patients, want of transport, or other circumstances, cannot be moved, it will cease to belong to the division, but will come under the P.M.O. on the lines of communication, one of the reserve field hospitals being detailed by the P.M.O. to take its place.

In selecting a site for a field hospital, due precautions will be taken that it is as close as possible to the first line of assistance, that there is a practicable road from the front, and a sufficient water-supply in the vicinity.

Advantage will be taken of buildings, etc. ; but when none are available, the hospital tents will be pitched,* and the equipment, etc., drawn up under the direction of the M.O. in charge.

Additional tents will be obtained from regiments under authority from the G.O.C. divisions when there is great pressure on the hospital accommodation.

Field hospitals are not supplied with hospital clothing, but patients will wear their own clothes. Such articles of clothing as are absolutely necessary for patients will be obtained on requisition from the depots of clothing under the G.O.C. the lines of communication.

Washing materials will be supplied on requisition from the officer in charge of supplies.

A M.O. in charge of a field hospital will be guided generally by the instructions laid down for the duties of a hospital in time of peace as far as they can be carried out on field service.

A M.O. in charge of a field hospital will be responsible that the name of every man admitted into hospital is at once entered in the admission- and discharge-book (Army Book 27). He will send a daily state of sick and wounded (A.F. A 28) to the P.M.O. of the division, or, if with corps troops, to the P.M.O. of the force direct, and the M.O. in charge of every hospital in the field will send in a weekly return (A.F. A 29) to the P.M.O. of the field force, or of the Army corps in case of home defence.

He will also send in as soon as possible after an action a **nominal roll of all wounded** (on A.F. A 6) in duplicate, one through the P.M.O. of the field force, or of the Army corps in the case of home defence, to the G.O.C., and the other to the P.M.O. of the division, for transmission to the W.O.

He will send back all sick and wounded as soon as practicable, retaining only patients who might suffer by removal, or likely to return to duty within a short period,

who are * No tents are supplied for Home Defence.

detailing a M.O. to accompany each party, and an N.C.O. of the M.S.C. to take charge of the pack store lists, kits, arms, and accoutrements of the men.

He will also prepare a medical certificate for each man (Army Book 172), and a nominal roll in duplicate of all men being sent back (A.F. I 1226), showing numbers, names, corps, disease or wound, and date of admission and transfer ; one copy of the roll, with the individual certificates, to be given to the M.O. in charge of the sick party, and the duplicate to the P.M.O. as a record.

A M.O. in charge of a field hospital will, on requisition, replenish from his reserve panniers the medical and surgical panniers, field companions, and surgical haversacks held by M.O.s attached to corps and bearer companies, and will keep his own replenished by requisition from the advanced depot of medical stores.

*Medical and Surgical Equipment for a Field Hospital
(Home Defence).*

- 2 Field Medical Companions and water-bottles.
- 2 surgical haversacks and water-bottles.
- 2 pairs of field medical panniers.
- 1 pair of reserve medical panniers.
- 1 pair of special surgical panniers.
- 2 field fracture-boxes.

Note.—In a cavalry brigade field hospital 1 pair of field medical panniers and 1 field fracture-box are omitted.

Regimental Transport for Field Hospital (Home Defence).

- 1 forage-cart.
- 1 water-cart.
- 4 general service wagons for medical and surgical equipment, baggage, supplies, etc.

Making a total of 6 wagons and carts, with 10 drivers, 20 draught-horses, and 8 riding-horses. Total of horses, 28.

Loads of Field Hospital Vehicles. — Abridged (Home Defence).

Nos. 1 and 2 Wagons, each packed alike as under :—

- 2 boxes field stationery.
- 1 cash-box.
- 4 canteen panniers, A, B, C, and D.
- 1 filter and charcoal.
- 1 operating-mattress.
- 2 medical comfort panniers.
- 1 pannier of entrenching tools.
- 4 stretchers.
- 1 field fracture-box.
- 1 Field Medical Companion (on raves of wagons).
- 1 pair field medical panniers.
- 1 surgical haversack.
- 2 water-bottles.
- 1 pair reserve field medical panniers.
- 1 pair special surgical panniers.
- 1 veterinary pannier.

} No. 1
Wagon
only.

Nos. 3 and 4 Wagons, each packed alike as follows :—

- 50 blankets.
- 50 waterproof ground-sheets.
- Lanterns, flag-poles and flags, officers' baggage, and material for A.S.C.

} For sick.

The officers' baggage and the A.S.C. material is divided between these two wagons, so that the field hospital equipment, etc., is readily divisible into two.

Load of Supply Cart.

- 1 day's rations, forage and wood, camp-kettles,
- 2 grocery panniers, butcher's implements, etc.

WAR ESTABLISHMENT (HOME DEFENCE).

FIELD HOSPITAL OF 100 BEDS.

Ranks.	Personnel.*						Horses.		
	Officers.	Warrant Officers.	Staff Sergeants and Sergeants.	Artificers.	Buglers.	Rank and File.	Total.	Private, or provided under Allowance Regulations.	Public.
								Riding.	Draught.
<i>R. Army Medical Staff. C.</i>									
Surgeon-Lieut.-Colonel ..	1	..	..	..	..	..	5	1	..
Surgeon-Major ..	1	..	..	..	..	..		1	..
Surgeon-Captains or Lieuts.	2	..	..	..	..	..		2	..
Quartermaster ..	1	..	..	..	..	..		1	..
<i>Medical Staff Corps.</i>									
Warrant Officer ..	..	1	..	..	..	..	1	..	1
Wardmaster ..	..	..	1	..	..	..	7	..	..
Steward ..	..	..	1	..	..	..		..	..
Compounders ..	..	..	2	..	..	..		..	..
Cook ..	..	..	1	..	..	..		..	..
Pack Storekeeper ..	..	..	1	..	..	..	32	..	..
Supernumerary ..	..	..	1	..	..	..		..	..
Corporal, as Steward ..	..	..	..	..	..	1		..	..
„ Cook ..	..	..	..	..	..	1		..	..
„ Clerk ..	..	..	..	..	..	1	14	..	..
„ Supernumerary ..	..	..	..	..	..	1		..	..
Privates, as Ward Orderlies ..	..	..	..	..	..	14		..	..
„ Cook ..	..	..	..	..	..	1		..	..
„ Pack Storekpr. ..	..	..	..	..	..	1	5	..	..
„ Messenger ..	..	..	..	..	..	1		..	..
„ Washermen ..	..	..	..	..	..	2		..	..
„ Servants ..	..	..	..	..	..	5		..	..
„ Supernumrs. ..	..	..	..	..	..	4	4	..	..
Total ..	5	1	7	..	..	32	45	5	1
<i>Transport attached from Army Service Corps.</i>									
Warrant Officer ..	..	1	..	..	..	..	1	..	1
Sergeant ..	..	..	1	..	..	..	16	..	1
Corporal ..	..	..	..	..	..	1		..	..
2nd Corporal ..	..	..	..	..	..	1		..	..
Shoeing and Carriage Smith ..	..	..	..	..	..	1		..	..
Privates, as Drivers ..	..	..	..	..	..	12	12	..	20
Total ..	..	1	1	..	..	15	17	..	2

* The establishment of a cavalry brigade field hospital is half that laid down for a field hospital—viz., 24 A.M.S. and M.S.C., and 6 A.S.C., attached.

HOSPITALS ON THE LINES OF COMMUNICATION.

These hospitals will, if possible, be dieted, and will be equipped with a view to being readily moved when necessary. They are supplied with clothing, but will not be supplied with special wagon transport.

The M.O. in charge will render the returns mentioned in connection with field hospitals as far as applicable, except the special return of wounded after an action.

The choice of a site will be based upon the usual considerations of sanitation, access, and communication, the chief medical points to bear in mind being the character and elevation of the country, the nature of the soil, proximity and purity of water-supply, practicability of drainage, shelter afforded by wood or high land, convenience of distance from main road or other line of communication, and, as far as possible, all those sanitary instructions laid down for buildings, camps, etc.

Buildings will be used when practicable, but hospital marquees will be issued from the base when such are not available.

Hospitals will be placed at regular and convenient intervals to suit the position of the forces and the circumstances of the wounded.

Separate accommodation for officers will be provided in each.

When it is decided to send sick and wounded from the hospital towards the base, the M.O. in charge will prepare from the admission and discharge-book a medical certificate (Army Book 172) for each man individually, and also a nominal roll (A.F. A 36) in duplicate of all the men proceeding, showing numbers, names, and corps, disease or wound, and date of admission and transfer. One copy of the roll, with a medical certificate for each patient, will be given to the M.O. proceeding in charge of the sick party, and the duplicate copy of the roll will be sent to the P.M.O., and retained by him as a record for reference.

He will detail a M.O. to proceed with each party of sick and wounded proceeding to the base, and a N.C.O. of the M.S.C., who will take charge of the pack store lists, kits, arms, and accoutrements of the men, and who will sign the counterfoils of the pack store book in the

hospital, and endorse the lists themselves on taking them over in his charge.

M.O.s attached for duty will be guided by the usual instructions so far as they apply to hospitals in the field.

When a M.O. attached to a hospital takes charge of a convoy of sick proceeding to the base, he will hand over to the M.O. in charge of the hospital the medical certificate (Army Book 172), and to the quartermaster of the hospital the pack store list, kits, arms, and accoutrements of any man who may be admitted to a hospital on the lines of communications. The man's disposal will be marked on the nominal roll (A.F. A 36).

On arrival at the base, the remaining medical certificates and the nominal rolls will be handed to the P.M.O. there ; the rolls will be carefully preserved, so that men can afterwards, if necessary, be traced ; the kits of sick and wounded will go with them to hospital at the base, but arms and accoutrements will be handed over to the O.C. the military depot.

When a man dies on the journey to the base, his effects will be taken on, and handed over with the pack store list to the O.C. the military depot at the base.

Washing will be performed by the washermen attached to the hospitals.

These hospitals are sometimes spoken of as **stationary hospitals**, but are not to be confused with permanent *station hospitals*.

GENERAL HOSPITAL (HOME DEFENCE).

A **general hospital at the base of 520 beds** may be organized on much the same lines as general hospitals in time of peace, with such modifications as are rendered necessary by position of force, climate, supplies, etc.

Probably general hospitals and stationary hospitals would not be established for home defence, the wounded from field hospitals being sent to large central hospitals in London and elsewhere.

HOSPITAL SHIPS AND TRANSPORTS.

In case of service abroad, **hospital ships** (200 to 250 beds) are organized and equipped at the sea-board base of operations, and the patients sent home to England by **hospital transports**.

WAR ESTABLISHMENT (HOME DEFENCE).

ESTABLISHMENT OF A STATIONARY HOSPITAL OF
200 BEDS.

Ranks.	Personnel.						Horses, private, or provided under Allowance Regulations.	Remarks.
	Officers.	Warrant Officer.	Staff Sergeants and Sergeants.	Corporals.	Privates.	Total.		
<i>Army Medical Staff.</i>								
Brigade Surgeon .								
Lieut.-Col. ..	1	10	1	Unit — 200 beds, divisible into four independent sections.
Surgeon-Lieut.-Cols. ..	2	..	..	..	..		2
Surgeon-Majors. ..	2	..	..	..	..		2
Surgeon-Captains or Lieutenants ..	4	..	..	..	..		4
Quartermaster ..	1	..	..	..	..		..
<i>Medical Staff Corps.</i>								
Warrant Officer	1	1	..	* Including 1 clerk.
Staff-Sergeants and Sergeants ..	..	..	8*	..	..	8	..
Corporals ..	..	..	..	8	..	66	..
Privates ..	..	..	..	..	48		..
Servants and batmen ..	..	..	..	..	10		..
Total	10	1	8	8	58	85	9	

If transport be required, it will be furnished under orders of the General of Communications.

DEPÔTS FOR MEDICAL STORES.

A **depôt** of medical and surgical stores in charge of a M.O. will be established at the base of operations for the supply of all medical establishments with the force.

The medicines and materials will be packed in handy packages suitable for redistribution, and so arranged that supplies may be easily forwarded.

An **advanced dépôt** will also, if ordered, be formed as near the front as consistent with safety, in charge of a M.O.

SCALE OF MEDICAL AND SURGICAL EQUIPMENT FOR UNITS IN THE FIELD.

UNITS.	Field Medical Companion and Water-bottle.	Surgical Haversack and Water-bottle.	Field Medical Panniers (pairs).	Reserve Field Medical Panniers (pairs).	Special Surgical Panniers (pairs).	Field Fracture-box.	Surgical Bag for Cavalry.	Box of Apparatus for Frac- tures and Dislocations.	Remarks.
Staff	1*	1	...	† Only if cavalry or mounted infantry units.
Regimental...	1	1	1	...	...	...	1†	...
Bearer Companies ...	1	8	1	...	...	2	...	...
Field Hospitals ...	2	2	2	1	1	2	...	...
Advanced Depôt of Medical Stores (if ordered) ...	12	24	...	6	4	6	6	...	‡ To be supplied as re- quired from the nearest depôt of medical stores or field hospital.
Stationary Hospital on line of communi- cation ...	4	4	4	2	2	4	...	...
General Hospital (520 beds) at Base	2	2	10	10	5	10	...	2	
Base Depôt of Medical Stores ...	24	48	12	12	8	12	12	2	
Medical Officer with detached Company, Troop, or Battery ...	1†	1†	...	...	...	...	...	...

* Not issued for home defence.

The M.O. in charge will procure by requisition from the depôt at the base sufficient medicines and materials to supply the field hospitals, bearer companies, and regimental units. He must avoid having an undue amount which would hamper a forward movement of the force.

The M.O. in charge will keep and account for stores, keeping the register of medical stores, and copies of all indents for stores on the base, and requisitions for supplies from the front.

MEDICAL AND SURGICAL EQUIPMENT IN THE FIELD.

FIRST FIELD DRESSING.

When a soldier goes on active service, the **first field dressing** is sewn into a pocket on the inside of the skirt of his jacket, and thus the quantity of material required to be carried as medical stores is greatly reduced. The first field dressing is considered to be an article of clothing. The pattern now adopted dates from 1891, and consists of :—

Outer cover (sewn cloth).

2 safety-pins.

Inside cover (thin waterproof, cemented, airtight).

Thin waterproof (mackintosh) folded over dressings (size, 12 inches by 6 inches, to be torn in half if required). Gauze bandage, $4\frac{1}{2}$ yards long, folded flat into $2\frac{1}{2}$ inches by 4 inches.

Piece of gauze, 17 inches by 13 inches, weight not less than three pennyweights, folded to suit the size of the package.

Compress of compressed charpie to be of flax between layers of gauze (like Gamgee's dressing), capable of being teased out into a thick pad. Minimum weight of charpie, 155 grains; maximum weight, 165 grains.

The antiseptic agent used is corrosive sublimate, 1 in 1000.

CONTENTS OF SURGICAL HAVERSACK (*Abridged*).

Weight, with Haversack, about 5 lbs.

Morphia injection and sal volatile, each in stoppered bottle and boxwood case.

Graduated horn-cup.

Antiseptic lint (4 ounces).

4 loose-weave antiseptic bandages.

6 triangular bandages.

Boric wool (2 ounces).

2 tins adhesive plaster.

1 tin isinglass plaster.

Bearer's dressing-case, containing clasp-knife, dressing-forceps, needles, thread, sulphuro-chromic gut, etc.

Book of specification tallies, Army Book 166, and pencil.

2 sponges in waterproof bag.

2 field tourniquets.

1 small screw tourniquet.

2 Esmarch's web tourniquets.

Tin box containing wax-candle and matches.

2 pairs wire arm-splints, with tapes and buckles.

Note.—The dressing-case carried by each M.O. contains a hypodermic syringe.

CONTENTS OF FIELD MEDICAL COMPANION (*Abridged*).

Weight about 11 lbs.

Chloroform (2 ounces).

Iodoform (1 ounce).

Diarrhoea mixture ($1\frac{1}{2}$ ounces).

Sp. ammoniæ arom. ($1\frac{1}{2}$ ounces).

Tinct. opii ($1\frac{1}{2}$ ounces).

Antiseptic vaseline, 1 box.

Tin case, containing pills, powders, and tablets.

3 open-weave bandages.

2 suspensory bandages.

2 first field dressings.

Thin calico (1 yard).

Boric wool (2 ounces).

Candle and matches in tin case.
 Graduated horn-cup.
 Lint ($\frac{1}{4}$ lb.).
 Minim measure in case.
 2 tins adhesive plaster.
 1 tin isinglass plaster.
 Gutta-percha tissue.
 3 gum elastic catheters.
 3 sponges and small zinc basin, in waterproof bag.
 1 pair ratan-splints, with pad-cases.
 1 field tourniquet.
 2 Esmarch's web tourniquets.
 6 tape tourniquets.
 Leather case, containing ligatures, needles, scissors, pins, etc.
 Hypodermic syringe in case, with bottle of morphia injection and tube of morphia discs.

A large metal water-bottle, with drinking-cup and strap, is carried with each field companion and surgical haversack. The water carried in this is for the use of sick and wounded only.

CONTENTS OF FIELD MEDICAL PANNIERS (*Abridged*).

No. 1. The Medicine Pannier. Weight about 90 lbs.

Chloroform, morphia inject., iodoform, diarrhoea mixture, quinine, medicines, lamels and discs, brandy, etc.

Case of surgeon's instruments.

Writing materials.

Hypodermic syringe.

Clinical thermometer.

Candles, etc.

No. 2. The Material Pannier. Weight about 80 lbs.

Lint, plaster, splints, bandages, tourniquets, etc.

Extract of meat.

Etna and spirit.

The weight is equalized for side loads by strapping the field companion on No. 2 pannier.

TRANSPORT OF SICK AND WOUNDED.

The transport of sick and wounded from the front is effected by means of improvised seats, stretchers (regulation pattern or improvised), ambulance-carts, ambulance-wagons, cacolets ; carts or wagons procurable locally ; by rail in passenger carriages or goods wagons specially prepared ; by water in launches, barges, and boats ; and by sea in hospital transports.

WHEELED TRANSPORT.

Ambulance-Wagons.—These are four-wheeled vehicles, and the patterns in use in the service at present are Mark III. and Mark V. (fully described in 'Manual for M.S.C.').

Ambulance-Cart.—This is a two-wheeled vehicle, and the pattern in use (Mark II.) carries four patients sitting, or two lying on stretchers (described in 'Manual for M.S.C.').

TRANSPORT ON ANIMALS.

Cacolets (fully described in 'Manual for M.S.C.') are a kind of folding-chair, in which patients may be carried in pairs in a sitting position on pack-animals, a cacolet being fastened on each side of the pack-saddle. Cacolets are more particularly adapted for rough and mountainous districts unsuitable for wheeled transport.

Litters have been abolished in the English army.

TRANSPORT BY RAIL.

Passenger-carriages may be used for the transport of patients, any of those unable to sit up being laid upon the seats. Pullman-carriages and corridor-trains are especially suited for transport of sick and wounded.

Railway-wagons may be utilized by means of Zavo-dovski's plan. (See 'Manual for M.S.C.')

TABLE OF DIFFERENCES BETWEEN DIETED.

Classification :—

In Peace :

1. General hospitals.
2. Station hospitals.
3. Hospitals at stations where over 100 men are quartered.

In War :

4. Base hospitals.
5. Hospitals on lines of communication (if possible).
6. Hospital ships.

Equipment :

Hospital bedsteads, bedding utensils, etc., are provided as by Regulations.

Held by the Quartermaster on inventory for the P.M.O. or M.O. in charge, who is the accounting officer.

Diets :

Hospital diets as by regulations.

Extras :

As specified in 'Manual for the M.S.C.' under 'Stewards' Duties.'

Attendants :

Attendants are provided by the M.S.C. The following is the minimum establishment in a station hospital :—

One N.C.O. as wardmaster, steward, and compounder.

One private as cook.

Privates as ward orderlies as follows :—

When number of sick is below 15	.	.	.	.	1
" " " over 15 and below 25	.	.	.	.	2
" " " " 25 " 35	.	.	.	.	3

and so on.

Hospital Stoppages :

For men	.	.	.	.	.	.	7d. per day.
" boys	.	.	.	.	.	.	6d. "

DIETED AND NON-DIETED HOSPITALS.

NON-DIETED.

Classification :—

In Peace :

1. Hospitals where less than 100 men are quartered.
2. Militia under training where there is no station hospital.
3. Hospitals on board ships conveying troops.

In War :

4. Field hospitals.

Equipment :

Where strength of detachment is over 40 and under 100 ; is drawn, and held, and accounted for as in dieted hospitals, and on the following scale :—

For a strength of 40 men	.	.	.	.	2 beds.
" " 70 "	.	.	.	.	3 "
" " 90 "	.	.	.	.	4 "

Where strength of detachment is under 40, hospital equipment is not supplied, but men admitted use the barrack bedsteads, bedding, and utensils.

It is held and accounted for by the O.C. the corps, who appoints a regimental N.C.O. to take charge of it.

Diets :

Ordinary company rations prepared as suitably as possible for each case, and supplemented as prescribed by the Allowance Regulations.

Extras :

Tea, sugar, eggs, ext. carnis or essence of beef, arrowroot, milk, wine, brandy, diet drinks, barley, oatmeal, mustard, pepper, and salt.

Attendants :

Where the strength of detachment is over 40, attendants are provided by the M.S.C.

When under 40, they are provided regimentally on application to the O.C. the corps to which the sick belong.

These regimental attendants receive extra duty pay at the rate of 4d. per day.

The proportion is as laid down under Dieted Hospitals.

Hospital Stoppages :

These are for extras only, at the rate of 4d. per day for all ranks and ages.

J. F. Fotheringham. M.D.

MAJOR, A.M.S.

PART III.—CAMPS.

ONLY those matters which concern the health of the troops, and consequently the duties of the M.O.s, are here dealt with. Purely military considerations are not taken into account.

For further information, 'Regulations for Encampments' should be consulted.

While a camp may be formed of huts or tents, or may be mere bivouacs made of brushwood, straw, branches, etc., the following paragraphs mainly refer to camps formed of tents :—

THE SELECTION OF A SITE.

The main considerations in selecting a site for an encampment may be divided into **Military** and **Sanitary**.

In the field, when the enemy is at hand, and the encampment is for the night only, sanitary considerations are of secondary importance ; when the enemy is at a distance, and the encampment is for a longer period, sanitary considerations are of the greatest importance.

SANITARY CONSIDERATIONS.

The subsoil of a camping-ground should be sand, gravel, or chalk ; clay is usually damp. The side or top of a hill is much to be preferred to the ground immediately at its base. Wet ground surrounded by marshes should be avoided ; if troops have to be encamped on such a piece of ground for more than one night, drains should be cut through it to allow the water to flow away. The presence of moss generally indicates marshy ground.

It is unwise to encamp in a forest, or wood of any

extent, the accumulation of decaying leaves under the trees being often so great as to produce attacks of fever.

Newly ploughed ground should be avoided.

Grass is always healthy.

Brushwood is bad unless on a gravelly or sandy soil. It is perhaps better not to disturb the wood if the camp is only for a night or two ; but in the case of a standing camp, it should be cut down.

Ravines and watercourses must be carefully avoided. A sudden fall of rain will often in a mountainous country convert a ravine into a large stream.

Camping-grounds should be inspected by the sanitary officer before occupation.

DUTIES OF THE P.M.O. IN ASSISTING TO SELECT A SITE FOR A CAMP.

When a site is desired for an encampment, a **staff officer** is appointed to inspect and select the ground. He is accompanied by the **P.M.O.**, or an **M.O.** appointed by the latter, who will give his opinion (in writing, if necessary) on **the salubrity or otherwise** of the proposed position, with any recommendations he may have to make respecting the drainage, preparation of the ground, distance of tents or huts from each other, and the number of men to be placed in each ; the state of cleanliness of the surrounding ground, ventilation, water-supply ; the position and regulation of latrines and slaughtering places, the cleansing and disposal of refuse, the burial of the dead, and disposal of the carcasses of animals.

He will, in communication with the staff officer concerned, examine and report on the amount and quality of the **water-supply**, point out the best sources of supply, and indicate any **precautions** required in collecting, storing, purifying, and distributing water for use.

The site of a previous camp is to be avoided.

Examples of camps for the different areas, and a table of dimensions of full-sized and minimum-sized camps, together with the area desirable for parades, are given in the 'Regulations for Encampments.'

These dimensions apply to camps for ordinary field

service and units on a war footing. Between the limits laid down, a camp may be of any size.

In deciding this, the following must be borne in mind :—

- (1) The length of time troops are to occupy the ground.
- (2) That order, cleanliness, ventilation, and salubrity are to be ensured.
- (3) That means for passing freely through the camp are essential.
- (4) That a straggling camp increases the labour of fatigue duties, and impedes the delivery of supplies and circulation of orders.
- (5) That the more compact the camp, the easier it is to defend.

It is to be borne in mind that the intervals between units of the same or other arms should never be less than ten yards clear of the tent-ropes.

The position of the camp of the Medical Department will mainly depend on sanitary considerations and facility of communication, but in the vicinity of an enemy these must be subordinated to military requirements.

All medical establishments in the field are marked by the white flag with the red cross by day, and by two white lights placed side by side at night.

DIMENSIONS AND FORMS OF CAMPS FOR (a) A BEARER COMPANY, (b) A FIELD HOSPITAL.

(a) A Bearer Company Camp.

Frontage	-	-	-	-	=60 yards.
Depth	-	-	-	-	=100 „
Area	-	-	-	-	=1 $\frac{1}{4}$ acres.

(b) A Field Hospital for 100 Patients.

Frontage	-	-	-	-	=70 yards.
Depth	-	-	-	-	=160 „
Area	-	-	-	-	=2 $\frac{1}{3}$ acres.

Note.—A field hospital is divisible into half-hospitals for 50 patients each (see p. 49).

An ordinary pace being 30 inches, or five-sixths of a yard, it will be convenient to remember that six paces equal five yards.

For plans of these camps, see 'Manual for M.S.C.'

GENERAL INSTRUCTIONS.

(1) No part of a tent is to extend over the **boundary-line** of a camp.

(2) According to the prevailing wind, **kitchens** may be moved at the discretion of the O.C. the unit.

(3) The position of **latrines** must depend on the position of other corps, the length of time the camp is to stand, the prevailing wind, and the position of the water-supply.

(4) Whenever troops remain in camp **more than three days**, tents should, when weather permits, be struck from time to time.

All arms, straw, and blankets should be removed from the ground covered by the tent, and the ground swept clean with a broom or branches of trees, and left exposed to the sun and wind. Blankets, clothes, etc., should be spread out to air, and the tent roughly pitched in the intervals of the camp with slack ropes, and the fly loose to allow it to be well blown about.

Tents should never be pitched for occupation in the intervals.

(5) If troops remain **more than one night** in camp, the tent-flies should be rolled up the first thing every morning. In wet weather the fly may be rolled up on the leeward side of the tent.

(6) If the direction and nature of the **wind** permit, the doors of the tents of the half-battalions should be faced inwards. This will, in case of alarm, enable the men of the right half-battalion to form more quickly on their company parades, but this should not prevent their being turned away from the prevailing wind, if necessary. With mounted corps they should face the horse lines.

(7) As a **light** should never be left burning in an unoccupied tent, the last occupant must extinguish it before leaving the tent.

(8) **At night, and in rainy weather**, the tent-ropes

should be slackened, to prevent the tent-pegs being drawn or the tent-pole from breaking.

(9) **Trenches** should be dug round tents, and a drain should connect these trenches, so that the water may not lodge in them, but may run freely off. The first wet day after the camp is formed officers commanding companies, etc., should personally examine the ground on which their companies are encamped, and should see that proper drains are constructed. Half an hour's work on a wet day, when the natural run of the water can be seen, will do more to keep the camp healthy than a day's labour in dry weather.

On arrival in camp, the following parties are paraded by the Adjutant, and set to work as soon as possible :—

(1) **Cooking-party**.—Two cooks per company under the sergeant cook.

(2) **Latrine-party**.—Two men per company, and a proportion of pioneers under the pioneer sergeant.

(3) **Water-party**.—One N.C.O. and two men per company under a sergeant.

(4) **Ration-party**.—One N.C.O. and two men per company under the quartermaster-sergeant.

(5) **Wood-party**.—One N.C.O. and two men per company, acting under orders issued by a staff officer.

WATER-SUPPLY.

It is absolutely essential to the health of troops that the supply of water should be good and as abundant as possible.

Water is usually obtained from streams, ponds, or existing wells. In a standing camp it may be necessary to sink wells, make reservoirs, and lay pipes.

From whatever source the supply is derived, it must be kept from pollution, and sentries will therefore be constantly posted over it.

If the supply is from a stream, great care must be taken that the watering-place for the men is distinct from that of animals, and above it.

Where drains have to be carried into the stream, the points selected should be well below the bathing and

washing places, which should be between the sites of water-supply above and drainage below.

Patrols should be sent up-stream to prevent all pollution from washing, bathing, etc.

If the stream has a muddy bottom, small field-pumps should be used, and the mud not stirred up by dipping vessels into it.

A barrel, charred inside, and with holes at the bottom, sunk in the stream forms a convenient place into which to dip the sucker of a pump, or collect water.

When the stream is shallow, dams should be made across it.

When water is drawn from wells, all washing in the neighbourhood must be forbidden lest percolation take place into the wells.

Washing-tubs should be placed on benches, and the dirty water thrown into 'soak-pits,' and not on the ground. The men should stand on brushwood or gravel while washing.

DAILY ALLOWANCE OF WATER.

In temporary camps :—

For each man	-	-	-	1 gallon.
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In standing camps :—

For each man	-	-	-	5 gallons.*
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„ horse	-	-	-	10 „
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PURIFICATION OF WATER.

Water may be purified by—

- (1) Filtering.
- (2) Boiling.
- (3) The addition of chemicals.

(1) *Filtering.*

Various filtering materials are used—*e.g.*, sand and gravel, earth, charcoal, etc.

All these media should be heated to redness before use, and either frequently changed or purified by again heating to redness.

* This includes water for washing purposes.

Very useful filters for camp purposes may be made by taking two casks charred inside, and one smaller than and inside the other. The outer one is pierced with holes at the bottom, the inner one near the top. The space is filled with sand, gravel, or charcoal; both thus prepared are placed in the stream, and the water oozes through the filtering material and flows into the inner barrel.

In a standing camp, if the water is not good, charcoal should be made, and the water regularly filtered.

Water may also be filtered through chopped straw. This must be changed frequently. A sponge or a piece of cloth is better than nothing, or a handful of grass may be rolled into a cone and dipped into the pool, allowing the water to drip from the end.

In the Ashantee War of 1873 the water was purified by Surgeon-Major Gouldsbury's directions in the following manner, in the absence of proper filters:—

Alum was added to precipitate suspended matter. The water was then passed through a rough filter consisting of (1) sponge, (2) sand, (3) charcoal in pieces. It was then boiled, and a few drops of solution of permanganate of potash added.

Water, even when taken from a hole in a marsh, was innocuous after this treatment.

(2) *Boiling.*

This is by far the **best** and simplest method of rendering water innocuous, and must be adopted in all outbreaks of epidemic disease. The water is to be boiled for half an hour.

To remove the insipid taste of boiled water, agitation by shaking or rapid stirring is the usual means adopted.

(3) *Addition of Chemicals.*

Alum.—When water is thick and turbid, the addition of six grains of alum to the gallon will clear it by carrying down suspended matter, whether mineral or organic. It acts best in water containing calcium carbonate.

Condyl's Fluid.—In the case of foul-smelling or suspected water, add good Condyl's fluid, teaspoonful by teaspoonful, to three or four gallons of the water, stirring

constantly. When the least permanent pink coloration is produced, stop for five minutes. If the tint is then gone, add half a teaspoonful, and then half a teaspoonful more, if necessary, and allow to stand for six hours.

Then add six grains of alum for each gallon of water, and, if the water is very soft, a little calcium chloride and sodium bicarbonate, and stand for twelve or eighteen hours. If not clear, or if discoloured, filter through charcoal (Parkes).

Tea-leaves.—If thick and turbid, water may be boiled with tea-leaves, allowed to stand till cold, and poured off; it is then fit for drinking.

LATRINES.

Latrines must be formed by the latrine-party as soon as the troops arrive on the camping-ground, it being essential that the ground should not be soiled, and that the latrine accommodation should be ample. There should be seat room for 10 per cent. of the troops, or about 25 feet for every 100 men. Every care must be taken that they are so placed that no filtration can reach the water-supply. Their general situation is pointed out by the staff officer who hands over the ground to the corps.

A latrine for a one-night camp simply consists of a trench about 2 feet wide at the top, 1 foot wide at the bottom, and 1 foot 6 inches in depth. A length of 18 to 20 feet is usually sufficient; it must invariably be filled up in the morning before marching off.

In standing camps latrines are made with seats, and are screened off by canvas or brushwood. The seat is a simple pole supported by cross-poles at either end. The trench should be 3 feet wide at the top, 2 feet wide at the bottom, and as deep as the nature of the soil will allow. (4 feet is a minimum depth).

A fatigue-party should throw a couple of inches of earth over the soil every day. This, if carefully done, will prevent all smell.

In standing camps urinals should be established near the canteens and messes.

KITCHENS.

It is a matter of paramount importance that soldiers food should be carefully prepared, and that trained cooks should be provided in each company. It is the duty of the officers to see that this is done, and it should never be left to a N.C.O.

On arrival in camp, the cooking-party will proceed at once to make the kitchen.

If the encampment is for one night only, the 'trench kitchen' should be used, one being dug for each company.

The **trench-kitchen** is 6 feet long, 9 inches wide, 18 inches deep at the mouth, this depth being continued for 18 inches into the trench, and thence sloping up to a depth of 4 inches, where it opens into the chimney, with a splay-mouth pointing towards the wind, and a rough chimney 2 feet high at the opposite end, formed with the sods cut from the top of the trench.

It is advantageous if the trenches are cut on a gentle slope.

This trench will hold seven large or eight small oval kettles.

The large kettle cooks for eight men, and without vegetables for fifteen men.

The small kettle cooks for five men, and without vegetables for eight men.

All brushwood and long grass should be cut away for a circle of 20 feet round the kitchen, and may be used for lighting the fire.

If there is no time to dig a trench, or the ground be hard or sandy, the kettles may be placed in rows 10 inches apart, and the fire lighted between them, the heat being thus applied to the sides, in place of to the bottom. If necessary, a row of kettles can be placed across the others over the fire.

Under any circumstances troops should have their **dinner ready one and a half hours** after the rations are issued.

If troops remain in camp more than a day or two, it is advisable to make a regular field kitchen.

THE GRIDIRON KITCHEN

consists of nine parallel trenches 12 feet long, 9 inches wide, and 18 inches deep at the mouth ; this depth is carried for 18 inches inwards, and forms the fireplace, gradually diminishing to 6 inches where it enters the flue.

They are connected by splay-mouths 2 feet by 2 feet, and 18 inches deep, to the transverse trench, which is 36 feet long, 2 feet wide, and 21 inches deep.

The centre trench is connected with the chimney (6 feet high, 3 feet square at the bottom, and 2 feet square at the top) by a flue 12 feet long, 9 inches wide, 6 inches deep, and covered with the sods removed from the trenches. The outer trenches are connected by oblique flues, with the centre flue near its entrance to the chimney, and the remaining trenches are connected with the nearest of these flues respectively.

Each trench will accommodate about eleven oval or twelve small oval kettles, the holes for which should be modelled in clay, using the base of the kettles as a mould.

The kitchen will last a fortnight.

Under certain circumstances field ovens may be constructed for baking bread, etc. (for description, see 'Regulations for Encampments').

TENTS.

The regulation circular tents are intended to accommodate fifteen soldiers or four patients.

They are made of duck, are provided with 6-inch eaves to carry off water clear of the walls, and have three ventilators covered with bibs.

The height of the walls or flys is 2 feet 2 inches, and the pole is in two parts, and is 9 feet 9 inches long.

Mark III. weighs $41\frac{1}{2}$ lb., and has a diameter of 13 feet and capacity of 623 cubic feet.

Mark IV. weighs $44\frac{1}{2}$ lb., and has a diameter of 13 feet 6 inches and capacity of 672 cubic feet.

A larger tent, of marquee form, supported by two poles, is now on trial.

PART IV.—RATIONS.

THE **Government barrack ration** consists of :—

Meat ($\frac{3}{4}$ lb.=12 ounces).

Bread (1 lb.=16 ounces).

In camp the ration consists of :—

Meat (1 lb.).

Bread (1 lb.).

In the field the ration consists of :—

Preserved meat (1 lb.).

Bread ($1\frac{1}{2}$ lb.), or *Biscuit* (1 lb.)

Groceries (4 ounces).

About 25 per cent. of the meat is bone or other indigestible substance, and in cooking there is a further loss of about 25 per cent. (chiefly of water).

There is no provision for the issue of either vegetables or milk in barracks.

These and other articles of diet are provided by

EXTRA MESSING.

Each O.C. a company arranges for the extra messing of his men, and the accounts for the same are in his name, and are settled monthly.

Extra meat is drawn through the company officer from the A.S.C. at contract prices ; other articles are usually drawn from the canteen, such as tea, coffee, milk, sugar, potatoes, mixed vegetables, pepper, salt, mustard, etc. They are obtained by the orderly corporal of each company, who sends in his requisitions to the canteen steward every morning. All this extra messing is supplied on a fixed scale of quantity for each meal.

The funds are provided by a 'stoppage' from each man's pay, which varies in amount, but is usually about $3\frac{1}{2}$ d. per man per day.

FIELD RATIONS FOR OFFICERS AND MEN.

DETAIL OF RATIONS FOR EACH OFFICER AND MAN CARRIED WITH UNITS, AND IN THE FIRST LINE SUPPLY COLUMNS.

How Carried, and for what Purpose.	Field Ration. 1 lb. meat, preserved. { 1 ½ lb. bread, or 1 lb. biscuit. 4 oz. groceries.	Emergency Ration. 1 lb. 1 oz. meat biscuit.	Remarks.
On man	½ (a)	1	(a) The unexpended portion of his previous day's ration.
In regimental supply wagons for issue on arrival in camp ...	1 (b)	...	(b) The groceries are carried packed in panniers to facilitate distribution on arrival in camp.
In *first line supply columns (A.S.C.) to replace issues	1	...	
	2½	1	

* First line supply columns are composed of A.S.C. companies with infantry brigades and divisions, with corps troops, and with cavalry brigades.

NOTE.—For home defence, supply parks or movable magazines to carry a reserve of supplies for the A.S.C. supply columns will not be formed, as would be the case for active service abroad, when the advanced depot was connected with the base by a line of railway. Reserve supplies will, however, be stored in 'field dépôts' at railway-stations or other convenient centres, whence the supply columns will be replenished.

FORAGE IN THE FIELD.

DETAIL OF FORAGE FOR EACH DRAUGHT AND RIDING HORSE CARRIED WITH UNITS, AND IN THE FIRST LINE SUPPLY COLUMNS.*

How Carried, and for what Purpose.	Full Ration. 12 lb. hay. 12 lb. corn.	Corn Ration. 12 lb. corn.	Emergency Ration. 20 lb. patent forage.	Remarks.
On horse In each regimental wagon as a reserve ..	(a) ..	.. ..	.. 1 (b)	(a) The unexpended portion of its previous day's ration. (b) This ration is carried in the front box of transport wagons and carts. Riding-horses and certain draught-horses of Royal Artillery and Royal Engineer units do not have it. (c) Hay is supposed to be obtainable in the country.
In regimental supply wagons, for issue on arrival in camp .. In first line* supply columns, to replace issues .. ..	.. .. ..	1 (c) 1 (c)	.. ..
Total carried with unit, and in first line supply column ..	(a)	2 (c)	1 (b)	

* See note to Ration Table, p. 75.

NOTE.—From the above table it will be seen that forage for horses is carried as follows:—

For draught-horses = 2 corn + 1 emergency (b).

Riding-horses and certain draught-horses of Royal Artillery and Royal Engineer units same as above,
less the emergency ration.

FUEL.

(a) In the regimental wagons, 1 lb. per man, for issue on arrival in camp or bivouac.

(b) In each first line supply column (A.S.C.), 1 lb. per man, to replace issues.

The above is only intended for kindling purposes, and to supplement the wood to be obtained by the troops in
the country.

WATER AND MILK—MEAT—BREAD.

WATER.

The appearance of water is well known. Pure water should be perfectly clear, odourless, and tasteless, without reaction to litmus-paper, and of specific gravity 1000.

If in any of these respects a given sample is markedly different, the water must be considered unwholesome; but unfortunately water answering to the above description may be far from wholesome, and further tests are necessary.

The main impurities are ammonia, nitrites, nitrates, chlorides, lead and iron, and organic matter. These may be detected in part chemically and in part by the microscope. A few rough chemical tests are given below.

Rough Qualitative Tests for Water.

The following suggestions may be useful:—

(1) Try, if possible, to get water that is clear, free from sediment, and colourless.

(2) Test with a little nitrate of silver solution and a few drops of dilute nitric acid. Good water should only give a slight haze.

(3) Add a few drops of Nessler's solution for ammonia (off.). Good water should give no colour; a yellow tinge makes the water suspicious.

(4) Add a little permanganate of potash solution (Condy's fluid). Good water should remain pink for ten to fifteen minutes. If the colour fades rapidly or becomes brown, the water is to be suspected.

(5) Add some solution of starch, a little iodide of potassium solution, and a few drops of dilute sulphuric acid. If a blue colour appear within a minute or two, the water is suspicious.

MILK.

Specific Gravity, 1026-1035. Below this the addition of water is to be suspected.

Reaction.—Slightly acid, or neutral, or slightly alkaline.

If strongly alkaline, either the cow is diseased, or there is much colostrum, or carbonate of soda has been added. If markedly acid and milk not sour, boracic acid may be suspected.

Physical Characters.—Should be opaque, of full white colour, without peculiar smell or taste. On standing, it should cream, but throw down no deposit. A deposit is probably chalk or starch. When boiled, it should not change in appearance.

Milk may be preserved for some days by adding a little bicarbonate of soda and sugar, or by one of the following :— Salicylic acid, borax, boracic acid, or boroglyceride.

MEAT.

(1) *The Bone* should be about 20 per cent. of the entire animal.

(2) *The Fat* should be sufficient, but not excessive ; firm, but not like jelly or too yellow, and without hæmorrhage at any point.

(3) *The Flesh* should be firm, but elastic, not tough. There should be no lividity or marbling on cutting across some of the muscles, and the interior of the muscle should be of the same characters or a little paler. There should be no softening mucilaginous fluid or pus in the interstices.

Commencing putrefaction makes the intermuscular substance soft and easily torn, the colour becomes paler, and the odour and consistence show the change. In good meat, if a knife be pushed in some depth, the resistance is uniform ; in putrefying meat some parts are softer than others.

Note.—In cooking, meat loses about 25 per cent. of its weight, chiefly water.

BREAD.

There should be at least 30 per cent. of crust ; it should be well baked, but not burnt ; the crumb should be light and regular ; the colour should be white, or brownish-white ; the taste not acid ; no change, or very little, with blue litmus-paper.

If bread is sodden, the flour or baking is bad. If colour changes soon, the bread is too wet. If bread is acid, the flour is bad, or leaven has been used.

The chief adulterations of bread are :—

Alum : forbidden by law ; discovered by chemical tests.

Copper : detected by chemical tests.

Rice-flour : Small angular grains.

Potato-starch or potato : Often in little masses.

Bean and pea-flour : Dark colour. Moistening with hot water gives smell of pea.

PART V.—MARCHES.

DETACHMENTS of 200 men or upwards, and smaller detachments whenever the nature of the service renders it necessary, will be accompanied by a M.O., who will be included on the route, and should report, to the P.M.O. of the district to which they proceed, their arrival and departure.

An average route-march in the field = 10-12 miles per diem.

A long route march in the field = 16-20 miles.

A forced march = 25-40 miles.

In continuous marching a day's halt is made every fourth day.

Marches are modified by various conditions—*e.g.*, heat, dust, thirst, want of food, bad weather, obstacles, etc.

When troops are on the line of march the P.M.O., or M.O. appointed by him, accompanies the staff officer who precedes the troops, and collects information on the medical topography of the district in reference to camping-grounds, etc. He may also be consulted as to the length of march, frequency of halts, etc.

DUTIES OF M.O.S WITH TROOPS ON THE MARCH.

BEFORE STARTING.

Inspect the refreshments, and see that the men get a **good meal**, with coffee, etc. *Do not allow a morning dram.*

The **sick** are to report and be medically examined before starting.

Inspect water-bottles by examining one here and there, and see that they are filled.

The best drinks are :—

- (1) Cold tea freshly infused.
- (2) Limejuice and water.
- (3) Water.

Inspect haversacks in the same manner if food has been ordered to be carried in them.

As far as possible see that the men are wearing **thick woollen socks**, and that no man unfit to march is in the ranks. Each man has to carry his proper kit and equipment.

ON THE MARCH.

March in rear of the regiment so as to see and attend to any men who may fall out.

Remember that a **halt of five minutes** should be called after the first half-hour, and once an hour afterwards, and that in marches likely to be of more than six hours' duration, a **mid-day halt** of an hour and a half should be called for rest and a meal.

Give directions that at the halts, and at the close of the day's march, the heated men should not uncover themselves by removing overcoats, etc., and explain the great **risk of cold** after exertion.

Unless under special orders, do not discourage singing in the ranks.

If a man falls out, the O.C. his company leaves him in charge of a N.C.O. with a ticket as follows :—

‘ ——— marched off with the battalion, but was unable to keep up with it.’

(Captain's signature.)

(Date.)

The man is then attended to by the M.O.

Drinking should be forbidden on the march, and the mouth should be rinsed only with water.

Suitable halts should be allowed for natural purposes.

AT THE END OF THE MARCH.

See that the men have a **proper meal**. Inspect all **footsore men** (see next page). This should be done by an evening roll-call whenever practicable.

Turning in at night.—See that the men are not sleeping on **damp straw**; that they are well **covered up**; that the **ventilation** is good (if in billets).

HINTS FOR TREATMENT.

Among the common reasons for a man falling out are faintness, footsoreness, sunstroke, and chafing.

FAINTNESS.

Faintness may be caused *inter alia* by want of condition, marching with an empty stomach, and smoking strong tobacco, especially before starting.

The treatment is much the same in each case :— Lay the man down, remove accoutrements if necessary, loosen clothes, give a teaspoonful of sal volatile and some food (hot beef-tea if procurable). Place in ambulance till recovered.

FOOTSORENESS.

See that the boots fit and are not too new, and that the men wear **thick woollen socks**.

Before marching one of the following methods may be resorted to :—

(1) Soak the feet in hot water, wipe quite dry, and rub over with soft soap, working it into a lather. Then put on the socks.

(2) Rub the feet with tallow or fat or oil of any kind.

(3) Rub the feet with an ointment of tannin, one part, and zinc ointment, twenty parts.

(4) Soap the socks.

At the end of the day the feet, if sore, should be wiped with a wet cloth and rubbed with tallow and spirits in the palm of the hand, or they may be washed in hot or cold water containing salt and alum.

The feet should always be washed at the end of a march.

If blisters form, they should not be opened during the march, but afterwards a needle and thread should be drawn through and the thread left in till the morning.

SUNSTROKE.

The patient should be placed in the shade in the recumbent position, cold affusions applied to the head, neck, and chest, and perhaps a mustard-leaf placed on the nape of the neck.

Stimulant should only be given if there are signs of heart failure.

SPRAINS.

Rags dipped in cold water, or cold spirit and water with nitre, should be bound firmly round the part.

CHAFING BETWEEN THIGHS, ETC.,

May be probably best treated with powder, such as flour, zinc oxide, Fuller's earth, etc.

PART VI.—EXAMINATION OF RECRUITS.

ALL military M.O.s, and also M.O.s of Militia and Yeomanry and of the Army Medical Reserve, when their regiments are embodied or out for training, are empowered to medically examine recruits.

An approving M.O. is responsible for the measurement of recruits as regards height, chest, and weight, as well as for their age, being in accordance with the schedules given from time to time in the Army orders, and will see that the following particulars are entered on both attestations before signing them :— Age, height, weight, chest measurement, complexion, colour of hair and eyes, and any distinctive marks indicating congenital peculiarities or previous disease, writing 'None' when there are no distinctive marks.

He will also state in his own handwriting in the Recruits Register (Army Book, 46) the recruit's fitness or unfitness, and enter any remarks relative to vaccination and to cause of rejection, and will sign the entry.

He will prepare the medical history-sheets of recruits (A.F. B 178) at the time of the examination, and will be careful before signing them that the particulars entered are correct.

The medical history-sheet so prepared will at once be forwarded, with the attestation, to the O.C. the regimental district or corps the man is to join ; it is then handed over by him, after the regimental number has been inserted, to the M.O. in charge of the station hospital.

PRINCIPAL POINTS.

In the inspection of recruits the principal points to be attended to are :—

That the recruit is sufficiently intelligent.

That his vision is sufficiently good to enable him to see with either eye at the required distance.

That his hearing is good.

That his speech is without impediment.

That he has no glandular swellings or marks of scrofula.

That his chest is capacious and well formed, and that his heart and lungs are sound.

That he is not ruptured.

That the limbs are well formed and fully developed.

That there is free and perfect motion of all the joints.

That the feet and toes are well formed.

That he has no congenital malformation or defects.

That he does not bear traces of previous acute or chronic disease pointing to an impaired constitution.

That he possesses a sufficient number of sound teeth for efficient mastication.

Men presenting any of the following conditions will be rejected :—

Scrofula, phthisis, bronchial or laryngeal disease, palpitation or other diseases of the heart, generally impaired constitution, defects of vision, voice, or hearing, loss or decay of many teeth, contraction or deformity of chest or joints, abnormal curvature of spine, defective intelligence, hernia, hæmorrhoids, varicose veins or varicocele beyond a limited extent, inveterate cutaneous disease, chronic ulcers, fistula, traces of corporal punishment, or any disease or physical defect calculated to unfit them for the duties of a soldier.

When a recruit is found 'unfit' for the sole reason that he is not up to some one standard, it should be so recorded in the columns of remarks in the Recruits Register, and the following words should be added : 'Because he is under "height," "chest measurement," or "weight" (as the case may be), and is not likely to sufficiently develop ;' but if recommended for enlistment, the words 'will probably grow to standard' should be substituted for the above.

The recruit is examined wholly undressed, and careful attention is given to the above-mentioned points.

HEIGHT.

His height is ascertained by measuring him erect against the standard.

CHEST MEASUREMENT.

The recruit is made to stand erect with his feet together, and to raise his hands above his head. The tape will be carefully adjusted around the chest, with its posterior upper edge touching the inferior angles of the scapulæ, and its anterior lower edge the upper part of the nipples. The arms will then be lowered to hang loosely by the side.

The maximum expansion on deep inspiration will be carefully noted, and the minimum and maximum recorded thus: $\frac{33}{35}$, $\frac{34}{36\frac{1}{2}}$, etc.

The maximum expansion rarely exceeds the average minimum by more than 2 to $2\frac{1}{2}$ inches. Fractions of less than half an inch should not be noted.

VISION.

In examining a recruit's vision, he will be placed with his back to the light, and made to count the dots and describe their position at the distances specified on the test dot-card, first with both eyes, and then with each separately (A.F. I 1220).

A recruit whose vision has been tested and pronounced good on a primary examination will not, through his own declared inability to see the test-dots on secondary examination, be rejected, unless the approving M.O. is satisfied that the man's vision is really defective, and no deception is being practised by him.

TEETH.

The acceptance or rejection of a recruit on account of loss or decay of several teeth will depend upon the consideration of the relative position of those which are no

longer effective. Thus the loss of several teeth contiguous to each other in the one jaw, leaving none to oppose those in the other jaw, would be a cause for rejection, but not the loss of a similar number distributed between the two jaws and in different positions. Again, the loss of many teeth in a man of an indifferent constitution would point to rejection, while a thoroughly robust recruit who has lost an equal number might be accepted.

VACCINATION.

Every recruit, unless bearing distinct marks of smallpox, will be vaccinated on the second day after joining the depot or headquarters of his corps, unless, in the case of a recruit from the Militia, the operation is certified to have been successfully performed during his service in that force. The M.O. in charge of the dépôt is responsible that this is done, and that it is recorded on the medical history-sheet and in the vaccination register.

After successful vaccination or revaccination of the recruit, the operation is not to be performed again during his service with the colours.

Soldiers' wives are to be revaccinated unless they bear distinct marks of vaccination or smallpox. Soldiers' children are to be vaccinated, and revaccinated, if necessary.

Vaccination is performed at general and station hospitals, and vaccination registers (Army Books 28 and 28 A) are kept there. An annual return is sent in by the M.O. in charge, from which the P.M.O. compiles a summary.

M.O.s doing duty with troops make an annual inspection (in March) for vaccination marks of every man, woman, and child under their care, and furnish a certificate of the results to the P.M.O. for the D.-G. by April 1.

All cases of smallpox are to be at once specially reported to the G. or other O.C. and to the W.O. They will also be noticed in the remarks appended to the weekly return of sick.

MEDICAL HISTORY-SHEETS (A.F. B 178).

The medical history-sheet is one of the personal documents of the soldier (of which there are several, see opposite page), and is the one of chief interest to M.O.s.

The M.O. approving recruits prepares it at the time of examination, and is careful to see that it is correct in every particular before signing it. Only congenital or other marks of professional interest should be noted in this document.

The M.O. in charge of the station hospital keeps in his custody the medical history-sheets of all troops at the station whose sick are treated in the hospital under his charge. When a corps leaves a station, the sheets will be returned completely filled in to the O.C. They are available for reference by the officer in medical charge of troops, but are not to be removed from the hospital without written permission and receipt given.

The M.O. in charge fills in the columns 'station' and 'date of arrival' as soon as the sheets come into his custody. Every admission to hospital is at once entered and completed on the discharge or death of the patient, as also particulars of vaccination, revaccination, date of supply of truss, etc. When a soldier leaves a station at which he has not been in hospital, an entry 'No admission' will be made and signed.

When a soldier becomes non-effective through discharge, invaliding, or desertion, his medical history-sheet will accompany his other personal documents. When non-effective through death, the sheet is completed and sent direct to the **W.O.** by the M.O. of the station hospital.

If a soldier is sent to a general hospital or committed to a military prison, his medical history-sheet is sent with him. At the general hospital it is taken charge of, kept up, completed, and transmitted to its final destination by the Registrar.

PERSONAL DOCUMENTS OF A SOLDIER.

1. Soldier's Pocket Ledger, or soldier's small book. He keeps it with him, and it is to be corrected on January 1 of each year. It contains :—

Soldier's name and description.

Pay and clothing account.

Certificates and medals.

Promotion and reduction.

Next of kin.

Form of will, and M.O.'s declaration.

Measurements from time to time.

2. Medical History Sheet (A.F. B 178). Is kept at the station hospital of the district the man is in.

3. Musketry Return.

4. Company Defaulter's Sheet.

5. Regimental „ „

6. Court Martial „ „

7. Parchment Certificate of Character on transfer or discharge. Takes it with him.

8. Parchment Certificate of Discharge. Two forms :—

(1) Ordinary.

(2) 'With ignominy.'

On going into the field :—

9. Description Card (A.F. B 2067). Sewn into the coat.

INVALIDING OF SOLDIERS.

THIS is carried out according to the instructions in the Queen's Regulations.

None but soldiers disqualified by actual disability, without regard to length of service, are to be brought forward for discharge as unfit for service.

A **detailed medical history-sheet** (A.F. B 179) of a man considered unfit for service is prepared in **duplicate** by the M.O. in whose care he may be.

If **at the headquarters of a district**, the M.O. in charge of the station hospital will inform the man's C.O. of the proposal to bring him forward for invaliding, and will submit to the P.M.O. the detailed medical history (A.F. B 179) in duplicate, the original of which must be in the M.O.'s own handwriting, together with the man's medical history-sheet (A.F., B 178, see p. 88).

Certain questions of the detailed medical history-sheet are obtained from the man's C.O., and the proceedings of any court of inquiry upon any injury he may have received. The P.M.O. will carefully sift and verify the detailed medical history, and will inspect the proposed invalid.

If the P.M.O. concurs, he will submit to the G.O.C. that the man be examined by a medical board.

If **at an out-station**, the case will be similarly represented to the man's C.O. and the P.M.O., the latter of whom, if he concurs, causes the man's removal to the headquarters of the district, where after a period of personal observation he applies for a medical board, on being satisfied that the man should be invalided. This board, assembled by order of the G.O.C., records its opinion on the third page of the detailed medical history-sheet (A.F. B 179). The proceedings are submitted to the P.M.O., who signs the form in duplicate. On approval of the discharge by the G.O.C., the P.M.O. returns the original document and the medical history-sheet to

the M.O. in charge, for transmission to the man's C.O. The duplicate is kept as a record by the P.M.O.

Invalids sent from abroad are accompanied by their detailed medical histories in duplicate, and by their medical history-sheets, which are brought back by the M.O. proceeding in charge with them.

Cases of *epilepsy* require a certificate from a M.O. stating that he has actually seen the man in a true epileptic fit.

An invalid referred by a medical board for further treatment, or considered fit for service, will not be brought forward again for invaliding for six months.

It is most important that the information in the detailed medical history should be accurate, both for the sake of the proper treatment of the patient, and in adjusting his claim on the public bounty. A M.O. must therefore carefully distinguish between the various sources of information, such as unsupported testimony of the invalid, his own observation, or reference to authentic documents. The M.O. in charge of the hospital will verify all the statements in the detailed medical history, countersign it, and become responsible for its correctness in every particular before he transmits it to the P.M.O. of the district.

MEDICAL EXAMINATION OF VOLUNTEERS BEFORE ENROLMENT.

THE following medical examination by a M.O. of the corps is now necessary :—

Every person offering himself for enrolment will be required to pass a physical examination, which will be carried out by a M.O. of the corps.

In the case of men enrolled at detached stations, or other places where a M.O. of the corps is not available, the examination will be carried out provisionally by the adjutant of the corps or one of the sergeant instructors, as prescribed for recruits of the regular army in such cases by the Recruiting Regulations. A record of the examination will be prepared and attached to the form of enrolment (A.F. E 594), and the men will be re-examined by a M.O. of the corps at the first convenient opportunity.

The chief points to be attended to in the examination will be—

- (a) That his vision is sufficiently good to enable him to see clearly with either eye at the required distance, as laid down on A.F. I 1220 (test dot-card).
- (b) That his hearing is good.
- (c) That his chest is capacious and well formed, and that his heart and lungs are sound.

The standards of height and chest measurement will (except in the case of boys, *i.e.*, under 17 years of age, see next page) be as follows :—

Artillery (except drivers in batteries of position)	} height chest measure- ment	...5 ft. 6 in. and upwards.	
		under 5 ft. 10 in.	... 33 in.
		5 ft. 10 in. and over	... 34 in.

Drivers in batteries of position	{ height ...5 ft. 4 in. and upwards. chest measure- ment }	under 5 ft. 6 in. ...	...	33 in.
		5 ft. 6 in. and over	...	34 in.
Light Horse, Engineers, Rifles, and Medical Staff Corps	{ height ...5 ft. 3 in. and upwards. chest measure- ment }	under 5 ft. 6 in. ...	...	32 in.
		5 ft. 6 in. and under 5 ft.		
		10 in. ...	...	33 in.
		5 ft. 10 in. and over	...	34 in.

In special cases men may be enrolled as drivers in batteries of position at a minimum height of 5 ft. 3 in., under the authority of the district O.C. No other exceptions to the above standards will be permitted.

The chest measurement of each Volunteer enrolled since January 1, 1876, will be entered opposite his name in the muster-roll of his corps (Army Book No. 216). The measurement will be given in inches, and will be entered immediately under the record of the man's height, thus: C. M.—inches.

No person under the age of 17 or above the age of 49 will be enrolled with the exception of boys as bandsmen or buglers, who may be under 17.

MEDICAL INSPECTION REPORT.

(APPLICABLE TO ALL RANKS.)

Name. _____

Apparent Age. _____ Years _____ Months.

Height. _____ Feet _____ Inches.

Weight. _____ lb.

Minimum Chest Measurement. _____ Inches.

Condition of { Sight _____
Hearing _____
Heart _____
Lungs _____

Physical Development. _____

* Fit or Unfit. _____

If Unfit, the cause of rejection to be briefly stated below :—

(Place) _____

(Date) _____ Surgeon _____

Examining Medical Officer.

* (a) As regards sight, the candidate's vision must be sufficiently good to enable him to see clearly with either eye at the required distance (*vide* instructions on back of test dot-card, A.F. I 1220).

(b) Men who are slightly ruptured may, if provided with a truss, be accepted for infantry, but in no case for artillery corps.

(c) The attention of examining M.O.s is directed to paras. 158-161, Volunteer Regulations, 1895.

PART VII.—UNITS TO WHICH M.O.s ARE ATTACHED (HOME DEFENCE).

A. STAFF UNITS.

	Total
Staff of an army corps with officers attached -	144
<i>M.O.s attached :—</i>	

1 P.M.O. - -	}	-	-	4
2 Surgeon-Majors				
1 orderly M.O. -				

Staff of an infantry division with officers, etc., attached -	74
<i>M.O.s attached :—</i>	

1 Surgeon-Colonel (P.M.O.)	}	-	-	2
1 Surgeon-Major - -				

The P.M.O. will make the necessary arrangements for the medical charge of this staff.

Staff of an infantry brigade with officers, etc., attached -	29
or staff of cavalry brigade .	22

The G.O.C. the brigade will detail a M.O. with one of the battalions or regiments under his command to take medical charge of this staff.

B. REGIMENTAL UNITS.

A cavalry regiment of four squadrons -	612
<i>M.O. attached -</i>	1

Horse Artillery Division :—

Two batteries of Horse Artillery (6 guns and 180 officers and men in each)	360
<i>M.O. attached -</i>	1

Field Artillery Division :—

Three Field Artillery batteries (6 guns and 171 officers and men in each)	}	513	}	-	697
Corps troops ammunition column						184
<i>M.O. attached -</i>					1

One Field Artillery Division with a division of infantry :— Total

Three field batteries	-	513	} 196	}	-	-	-	709
Infantry divisional ammunition column	-	-						
<i>M.O. attached</i>	-	-	1					

Regimental Staff of Royal Engineers :—

One pontoon troop	-	-	-	-	-	-	-	212
<i>M.O. attached</i>	-	-	1					
One field company	-	-	-	-	-	-	-	213
<i>M.O. attached</i>	-	-	1					

The M.O.s are so attached for purposes of supply, but may be attached to any units R.E. as the C.R.E. staff may direct.

One infantry battalion of eight companies :—

Officers and men	-	-	-	-	-	-	-	1011
<i>M.O. attached</i>	-	-	1					

One company of A.S.C. with headquarter and corps troops of Army Corps, and one company A.S.C. organized as a field bakery	-							458
<i>M.O. attached</i>	-	-	1					

One company A.S.C. with headquarter and divisional troops of an infantry division, and two companies A.S.C. with infantry brigades	-	-	-	-	-	-	-	690
<i>M.O. attached</i>	-	-	1					

NOTE.—Owing to recent changes it is probable that the numbers contained in each unit, as shown in the above and in the following tables, may not be absolutely accurate, but they are substantially correct, and any slight discrepancy will not affect in any way the number of M.O.'s in each, or the proportion of Bearer Companies or Field Hospitals.

No. 4.—ARMY CORPS.

HOME DEFENCE. 33,873 MEN.

Three Infantry Divisions with Corps Troops.

Infantry Division.

Infantry Division.

Infantry Division.

R.A.	FIRST BRIGADE INFANTRY	SECOND BRIGADE INFANTRY
R.E.		
A.S.C. ETC.		

R.A.	FIRST BRIGADE INFANTRY	SECOND BRIGADE INFANTRY
R.E.		
A.S.C. ETC.		

R.A.	FIRST BRIGADE INFANTRY	SECOND BRIGADE INFANTRY
R.E.		
A.S.C. ETC.		

TWO BEARER COMPANIES



TWO BEARER COMPANIES



TWO BEARER COMPANIES



THREE FIELD HOSPITALS.



THREE FIELD HOSPITALS.

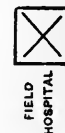


THREE FIELD HOSPITALS.



CORPS TROOPS

R.H.A.	R.A.	ONE CAVALRY REGIMENT	ONE BATTALION INFANTRY	TWO COMPANIES A.S.C.
+	+	+	+	+

Medical
Officers.

STAFF CORPS R.E.
+

ARMY CORPS STAFF
+

+

++++

+

+

+

+

MEDICAL OFFICERS.

3 infantry divisions, 31 M.O.s in each (see Table 3)	..	..	98
Army Corps staff ..	..	..	4
Staff Corps R.E. ..	..	..	2
1 cavalry regiment ..	..	..	1
1 Horse Artillery division ..	..	..	1
1 Field Artillery division ..	..	..	1
1 battalion infantry ..	..	..	1
2 companies A.S.C. ..	..	..	4
1 field hospital, corps troops ..	..	..	4
Total ..	..	..	108

APPENDIX.

CONVENTION OF GENEVA.

For the amelioration of the condition of wounded soldiers in armies during war (August 22, 1864).

THE ARTICLES OF THE CONVENTION.

Art. 1.—Ambulances and military hospitals shall be acknowledged to be neuter, and, as such, shall be protected and respected by belligerents so long as any sick or wounded may be therein.

Such neutrality shall cease if the ambulances or hospitals should be held by a military force.

Art. 2.—Persons employed in hospitals and ambulances, comprising the staff for superintendence, medical service, administrative, transport of wounded, as well as chaplains, shall participate in the benefit of neutrality whilst so employed, and so long as there remain any wounded to be brought in or to succour.

Art. 3.—The persons designated in the preceding article may, even after occupation by the enemy, continue to fulfil their duties in the hospital or ambulance which they serve, or may withdraw in order to rejoin the corps to which they belong.

Under such circumstances, when these persons shall cease from their functions, they shall be delivered by the occupying army to the outposts of the enemy.

Art. 4.—As the equipments of military hospitals remain subject to the laws of war, persons attached to such hospitals cannot, in withdrawing, carry away any articles but such as are their private property.

Under the same circumstances, an ambulance shall, on the contrary, retain its equipment.

Art. 5.—Inhabitants of the country who may bring help to the wounded shall be respected, and shall remain free. The generals of the belligerent powers shall make it their care to inform the inhabitants of the appeal addressed to their humanity, and of the neutrality which will be the consequence of it.

Any wounded man entertained and taken care of in a house shall be considered as a protection thereto. Any inhabitant who shall have entertained wounded men in his house shall be exempted from the quartering of troops, as well as from a part of the contributions of war which may be imposed.

Art. 6.—Wounded or sick soldiers shall be entertained and taken care of to whatever nation they may belong.

Commanders-in-Chief shall have the power to deliver immediately to the outposts of the enemy soldiers who have been wounded in an engagement, when circumstances permit this to be done, and with the consent of both parties.

Those who are recognised, after their wounds are healed, as incapable of serving shall be sent back to their country.

The others may also be sent back on condition of not bearing arms again during the continuance of the war.

Evacuations, together with the persons under whose directions they take place, shall be protected by an absolute neutrality.

Art. 7.—A distinctive and uniform flag shall be adopted for hospitals, ambulances, and evacuations. It must on every occasion be accompanied by the national flag. An arm-badge (brassard) shall also be allowed for individuals neutralized, but the delivery thereof shall be left to military authority.

The flag and the arm-badge shall bear a red cross on a white ground.

Art. 8.—The details of execution of the present convention shall be regulated by the Commanders-in-Chief of belligerent armies, according to the instructions of their respective Governments, and in conformity with the general rules here laid down.

Art. 9.—The high contracting Powers agree to communicate the present convention to those Governments

which have not sent plenipotentiaries to the International Conference at Geneva, with an invitation to accede thereto. The protocol is for that purpose left open.

Art. 10.—The present convention will be ratified, and the ratification will be exchanged at Berne within four months, or sooner if possible.

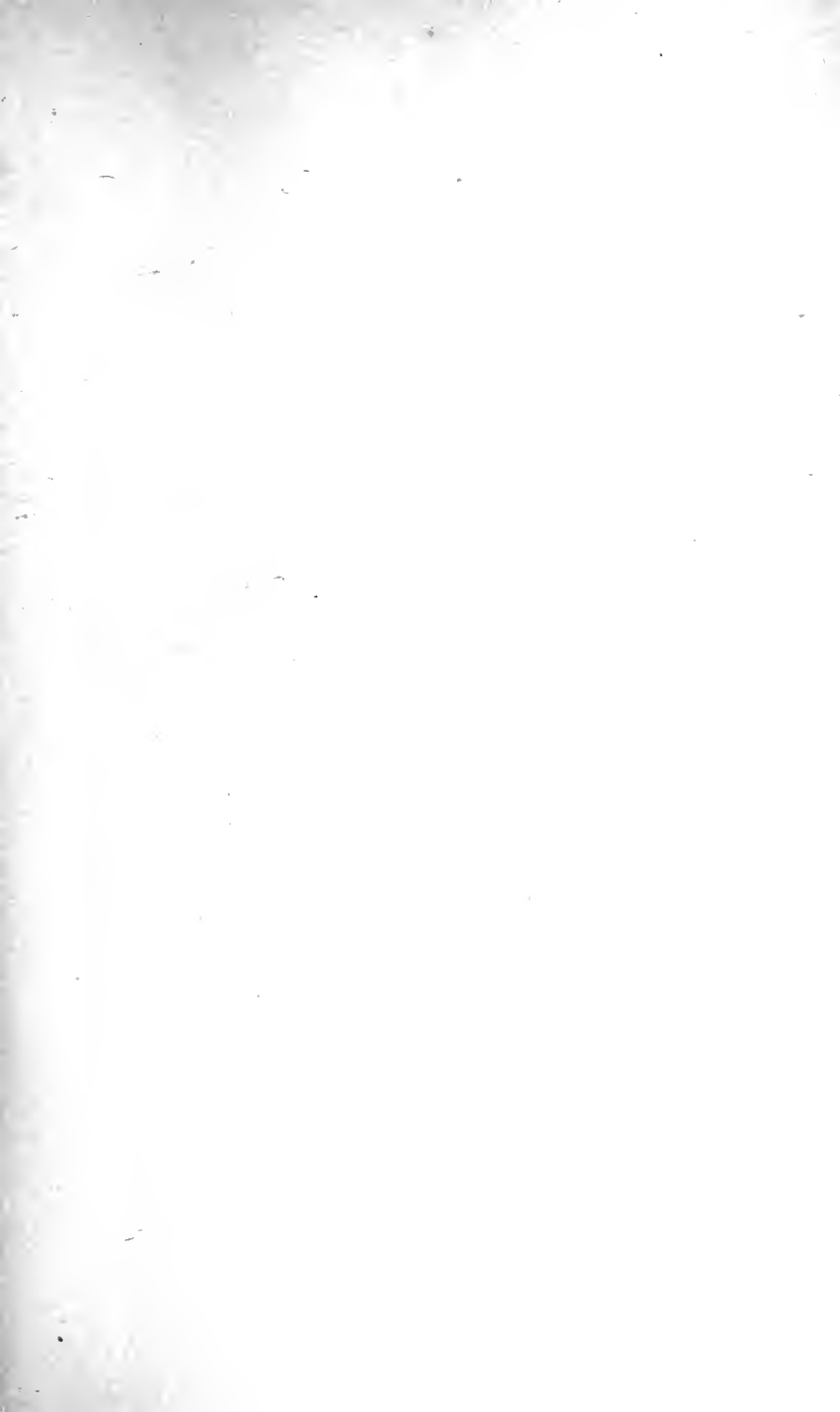
*Dr. Pelletier - Division of
for King - ad.
Alfred Van Wagon -*

THE END.

J. I. Fotheringham - M.D.

MAJOR, A.M.S.

O. C. No. 4, BEARER CO.





J. Y. Fotherham - M.D.
MAJOR, A.M.S.
O. C. No, 4, BEARER CO.

J. Y. Fotherham - M.D.
MAJOR, A.M.S.
O. C. No, 4, BEARER CO.

J. Y.



J. F. Thompson - M.D.

MAJOR, A.M.S.

O. C. No. 4, BEARER CO.

